NAVWAR

Draft

Environmental Impact Statement Appendices Volume I

Navy Old Town Campus Revitalization

Naval Base Point Loma San Diego, California

May 2021

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Appendix A

CEQA Evaluation

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Table of Contents

List of Figures

List of Tables

Abbreviations and Acronyms

Acronym	Definition
AB	Assembly Bill
APM	Automated People Mover
AVE	Area of Visual Effect
BMP(s)	best management practice(s)
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
dB	decibel
DoD	Department of Defense
DPM	diesel-exhaust particulate matter
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
FAA	Federal Aviation Administration
GHG(s)	greenhouse gas(es)
HRA	health risk assessment
ITC	Intermodal Transit Center
KOP(s)	key observation points
LEED	Leadership in Energy and Environmental Design
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Systems Command
NAVWAR	Naval Information Warfare Systems Command
Navy	Department of the Navy
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
OTC	Old Town Campus
PCB(s)	polychlorinated biphenyls
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
RAQS	Regional Air Quality Strategy
ROI	region of influence
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas and Electric
SHPO	State Historic Preservation Officer
SIP(s)	State Implementation Plans
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_x	sulfur oxides
TAC(s)	toxic air contaminants
TDM	Transportation Demand Management
TPA	Transit Priority Area
UFC	Unified Facilities Criteria
U.S.	United States
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC(s)	volatile organic compounds

1 Overview

While the Navy is not subject to requirements of the California Environmental Quality Act (CEQA), local agencies or private developer(s) involved in this project may need to satisfy CEQA in the future. Appendix A has been prepared to provide a basis if future CEQA level analysis is required. The Environmental Impact Statement (EIS) is not a joint National Environmental Policy Act (NEPA)/CEQA document.

1.1 Introduction

The United States (U.S.) Department of the Navy (Navy) prepared an EIS to evaluate the potential environmental consequences of the proposed modernization of Naval Base Point Loma Old Town Campus (OTC), San Diego, California. The federal Proposed Action would provide modern facilities to enhance Naval Information Warfare Systems Command's (NAVWAR's) operational effectiveness.

The proposed modernization of NAVWAR's facilities on OTC would include renovation or construction of new buildings, utilities, and infrastructure. To fulfill current and future mission requirements, the NAVWAR facilities must comply with seismic safety design and anti-terrorism force protection standards, provide controlled site access, and be supplied by independent utility systems in all spaces designated as secure. Modernization would be accomplished in either of two ways:

1. Navy Redevelopment: A Navy-only project that would construct new or renovate existing NAVWAR facilities at OTC. No public-private or mixed-use development would occur on OTC under this scenario.
2. Public-private Redevelopment: Collaboration between the Navy, the private sector, and possibly other government agencies to finance and construct new NAVWAR facilities at OTC. Development would include new facilities for NAVWAR and a range of private mixed-use development (e.g., residential, office, retail, hotel). The developers of the mixed-use development would pay for construction of NAVWAR facilities in exchange for the opportunity to develop the remaining OTC land. Two of the action alternatives analyzed in the EIS include consolidation of a transit center to OTC.

As part of the Navy's Request for Interest to gauge interest and solicit ideas for the redevelopment of OTC through a public-private redevelopment arrangement, the San Diego Association of Governments (SANDAG) identified OTC as a potential location for a transit center. SANDAG also expressed interest in OTC as a potential location for a Central Mobility Hub. The Central Mobility Hub would be as a new multimodal regional transportation facility linking the San Diego region with regional transit and the San Diego International Airport. SANDAG and the Navy signed an agreement on September 19, 2019 and a follow-on agreement on January 23, 2020 defining collaboration between the agencies regarding the potential redevelopment of OTC with new NAVWAR facilities, mixed-use private development, and a transit center. These are included as Appendix P of the EIS. If the Navy decides to pursue an Alternative that includes a transit center, SANDAG may decide to, in the future, develop the proposed transit center into the Central Mobility Hub. Alternatives 4 and 5 include the consolidation of a transit center on OTC, but not an increase in transit or a connection to the airport as proposed by the Central Mobility Hub. SANDAG is also a cooperating agency for the development of the EIS pursuant to NEPA and associated regulations.

Appendix A analyzes additional topics required under CEQA. If the Navy transfers property out of federal ownership or selects an alternative in which SANDAG has a role in the private development, the private developer or SANDAG may be able to utilize the EIS to help meet future CEQA compliance obligations. In the event that future actions taken by the Navy, SANDAG, or a private developer are outside the scope of this EIS, subsequent NEPA or CEQA may be required. The EIS is not a joint NEPA/CEQA document and future CEQA actions would be the responsibility of the appropriate state or local agency or private developer. Compliance with CEQA is not required for the Navy to select an alternative and publish a NEPA Record of Decision.

This appendix presents the additional analysis for Alternatives 4 and 5 for CEQA that would be above those already discussed in the EIS. These alternatives represent the highest levels of potential development for each use type and include the potential development of a consolidated transit center.

CEQA applies to discretionary actions of California state and local public agencies that may result in a direct or reasonably foreseeable indirect change to the physical environment. CEQA requires the preparation of an Environmental Impact Report (EIR) where there is a fair argument, based on substantial evidence, that the action may result in a potentially significant environmental impact. CEQA and CEQA-implementing regulations promulgated by the California Natural Resources Agency set forth the requirements that apply to the preparation of EIRs. CEQA (Public Resources Code section 21083.7) and CEQA-implementing regulations (California Code of Regulations, title 14, section 15221) allow agencies to rely on an EIS prepared pursuant to NEPA for purposes of CEQA compliance in lieu of preparing a separate EIR, if the EIS satisfies CEQA's requirements for EIRs.

CEQA compliance would be required prior to state or local discretionary actions and approvals necessary to implement Alternatives 4 and 5. Specifically, CEQA would apply to (1) SANDAG entering into a lease or property conveyance agreement with the Navy to obtain control of all or a portion of OTC from the Navy, (2) commercial development of OTC by SANDAG or private entities selected by SANDAG pursuant to its agreement with the Navy, and (3) the development of a consolidated transit facility at OTC.

In addition to the general CEQA framework described above, the California legislature recently approved Assembly Bill (AB) 2731, which expressly provides that SANDAG may acquire control of OTC property prior to completing CEQA environmental reviews and may rely on the Navy EIS to meet its CEQA requirements for transit-oriented private commercial development of OTC, provided certain other requirements in AB 2731 are met. AB 2731 would require SANDAG to prepare a standalone CEQA EIR prior to development of a Central Mobility Hub and related transit facilities at OTC.

The purpose of this CEQA Evaluation Appendix is to (a) present an analysis of potential impacts to the environment from project Alternatives 4 and 5, conducted in accordance with CEQA, and (b) comply with Public Resources Code 2100-21189 and the California Code of Regulations, title 14, division 6, chapter 3, sections 15000-15387. This appendix presents CEQA analysis for Alternatives 4 and 5, which represent the highest levels of potential development for each use type and include the potential consolidation of a transit center. Because this appendix considers the highest levels of potential impact, the analysis would also be applicable if Alternative 2 or 3 is selected.

1.2 SANDAG's Regional Transportation Plans

This section provides background on SANDAG's planning processes and involvement with the Navy's proposed revitalization at OTC. Additional background information on the Proposed Action (including the purpose and need) are in Chapter 1 of the EIS.

Every 4 years, SANDAG prepares and updates a Regional Plan in collaboration with the 18 cities and County of San Diego along with regional, state, and federal partners. The current Regional Plan (San

Diego Forward: the 2015 Regional Plan) was approved in October 2015 by the San Diego Board of Directors. The Regional Plan provides a blueprint for a sustainable future for the San Diego region by addressing the following items: future transportation goals (2050 and beyond), population distribution, transportation methods, and growth strategies based on multiple factors (creating economic growth, preserving the environment, meeting the needs of city residents, and maintaining quality-of-life).

SANDAG is developing a new Regional Plan (San Diego Forward: The 2021 Regional Plan) that reimagines how people and goods move in the 21st century. SANDAG is applying key strategies, known as the 5 Big Moves, to envision a balanced transportation network that leverages technology to create a safe, adaptable, and socially equitable transportation ecosystem that responds to the unique needs of the diverse communities throughout the region. On October 8, 2019, California AB 1730 (Gonzalez) was signed into law that extended development of a new vision for the 2021 Regional Plan to late 2021. In the interim, SANDAG prepared a 2019 Federal Regional Transportation Plan (RTP) that complies with federal requirements for the development of regional transportation plans, achieves air quality objectives of the U.S. Department of Transportation, and preserves funding for the region’s transportation investments.

The 2019 Federal RTP adds to San Diego Forward: The 2015 Regional Plan with updated project costs and revenues and a new regional growth forecast. The 2019 Federal RTP is consistent with the Final EIR for the 2015 Regional Plan approved by the SANDAG Board of Directors on October 9, 2015.

1.2.1 Airport Connectivity Planning

Increasing regional connectivity to the San Diego International Airport is a key planning objective of the 2019 RTP. In 2009, SANDAG, the Airport Authority, and the City of San Diego completed a study entitled Destination Lindbergh, which detailed a planning strategy for the ultimate buildout of San Diego International Airport at its present location (San Diego Regional Airport Authority, 2009). The document evaluated improved intermodal access to the airport and determined actions that could reduce traffic on surrounding arterial streets. Also envisioned was a consolidated rental car center on the north side of the airport, which opened in 2016, and the development of an Airport Intermodal Transit Center (ITC) along the existing rail corridor to provide direct connections to Amtrak, COASTER, trolley, bus services, and the southern terminus for the proposed high-speed train service. Also planned were direct connector ramps from Interstate 5 to Pacific Highway that would improve access to and from the airport.

In 2018, the Airport Authority and the Port of San Diego completed the multimodal studies for both Harbor Drive (Kimley Horn, 2017) and North Harbor Drive (Port of San Diego, 2018), which focused on off-airport multimodal solutions within each of their respective jurisdictions. Through creation of the Airport Connectivity Subcommittee, SANDAG built upon these study areas to include critical sections of northern Pacific Highway and capture proposed mid- and long-term transit projects that could not be assessed in these previous studies. The ITC was included in one of the concepts advanced to the SANDAG Board as part of the Airport Subcommittee’s work in 2019.

Four concepts were reviewed by the Airport Connectivity Subcommittee: Concepts 1 and 2 feature a Central Mobility Hub at OTC (where NAVWAR’s headquarters are located), which includes a multimodal transportation center with high-frequency Automated People Mover (APM) service.

- Concept 1 features a Central Mobility Hub at OTC, including a multimodal transportation center with high-frequency APM service and assumes a nonstop, high-speed service to San Diego International Airport via a 1-mile tunnel route.
- Concept 2 also features the Central Mobility Hub and APM service as noted for Concept 1 but assumes service to San Diego International Airport via a 3.6-mile surface/elevated APM route along Pacific Highway, Laurel Street, and Harbor Drive with intermediate stops at the airport rental car center and the planned development at Harbor Island East Basin.
- Concept 3 also includes a Central Mobility Hub but focuses on a multimodal transportation center with numerous connections to regional transit lines, excluding Amtrak and COASTER services, and with high-frequency APM service to San Diego International Airport, and an airport-like curb system for auto-based travelers. An APM station would provide service to San Diego International Airport via a 2.6-mile surface/elevated route along Pacific Highway, Laurel Street, and Harbor Drive, with intermediate stops at the airport rental car center and planned development at Harbor Island East Basin. (Note: The Central Mobility Hub is a separate concept from the Airport ITC described earlier in this chapter and identified in the 2015 Regional Plan/2019 Federal RTP. The Central Mobility Hub is anticipated to include new regional transit services and connections to the San Diego International Airport.)
- Concepts 4a and 4b include extension of the trolley system to the planned San Diego International Airport transit station with an intermediate stop at the planned development at Harbor Island East Basin.

On September 27, 2019, the SANDAG Board of Directors approved the conceptual transportation solutions included in the Airport Connectivity Analysis for further study and environmental analysis (SANDAG, 2020a). The intent of the analysis was to have enough data on each of the conceptual transportation solutions so that the Board is ultimately able to select a preferred solution.

Throughout 2019 and 2020, SANDAG worked to build consensus to develop concepts that would not only enhance passenger and visitor experience with a high-quality transit connection to the airport, but also address anticipated congestion on key airport access roads, including freeway and roadway modifications. In February and March 2020, SANDAG, the City of San Diego, the Airport Authority, and San Diego Unified Port District entered into a memorandum of understanding regarding transportation projects at or near the San Diego International Airport, agreeing to work together to create a regional transportation plan that provides enhanced transit connections to the airport and improves roadway access, multimodal circulation, and reduces congestion around the airport and port area.

1.2.2 Discretionary Actions and Approvals Necessary to Implement Alternative 4 or 5

The Navy identified five alternatives in the EIS. Two of those alternatives, Alternatives 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with Transit Center (Preferred Alternative) and Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with Transit Center, consider the redevelopment of OTC to include Navy, transit, and transit-oriented development. If selected by the Navy, Alternative 4 or 5 could require certain discretionary permits, approvals, or agreements, including:

- A lease or property conveyance between the Navy and a public-private developer or SANDAG, setting out the terms of the redevelopment of OTC

- Public-private sector development agreements for the redevelopment of OTC to include modernized Navy facilities and mixed-use development
- Other agency, permits, approvals or agreements (e.g., encroachment permits and rights-of-way from Caltrans, utilities arrangements, and possible involvement of the City of San Diego)

1.2.3 Public-Private Sector Development Agreements Addressing Navy, SANDAG, and Mixed-Use Development

SANDAG expects that development of a transit center would not require private funding, but SANDAG would coordinate with any public-private partnership to integrate the future transit center into the design of the mixed-use development. The agreements for private development could take the form of leases or subleases with developers, or fee transfer of property. Additional or supplemental NEPA and CEQA review may be required prior to the approval of such agreements and/or prior to the approval of specific development projects at OTC.

1.2.4 Formation of a Joint Powers Agency, Community Facilities District, or Similar Mechanism to Finance and Oversee Construction of Mixed-Use Development

Formation of a joint powers agency, pursuant to the Joint Exercise of Powers Act (California Government Code sections 6500-6599.3), Community Facilities District pursuant to the Mello-Roos Community Facilities Act of 1982 (California Government Code sections 53311-53368.3), enhanced infrastructure financing district (California Government Code section 53398.50), or a similar mechanism may occur to fund and oversee the construction of mixed-use development on OTC.

1.2.5 Actions That Exceed the Scope of the Analysis in the EIS

Alternatives 2-5 of the EIS cover development of new NAVWAR facilities and mixed-use private development. Alternatives 4 and 5 also include consolidation of a transit center on OTC. If the Navy selects Alternative 4 or 5 and if SANDAG's Board of Directors selects OTC as the location for a Central Mobility Hub, additional CEQA review of the Central Mobility Hub would be required prior to SANDAG making any decision or irretrievable or irreversible commitment with respect to approval of transit uses on the site. Alternatives 4 and 5 analyze the development of transit uses on OTC at a general level and include transit services similar to the Old Town Transit Center. Specific details on the transit center would be determined between the transit operators (Metropolitan Transit Service and the North County Transit District). Specific details on the Central Mobility Hub are not known at this time and would be subject to a separate standalone environmental review. However, since OTC is a potential location for the Central Mobility Hub, the proposal is addressed under cumulative impacts.

In addition, the EIS has envisioned that new transportation infrastructure maybe necessary to alleviate traffic congestion around OTC. These improvements have been included in the EIS as potential mitigation. Subsequent environmental clearance will be required when more detailed design and engineering is completed.

1.3 Structure of Appendix

This CEQA Evaluation Appendix is structured to meet environmental impact analysis criteria as set forth in Appendix G of the Guidelines for Implementation of the CEQA, while avoiding duplication of analyses performed in the EIS. Resource-specific impact analyses in this evaluation are organized under the relevant section headings of the EIS for cross-referencing. Table 1-1 cross-references the Appendix G issue area analyses within this appendix to the corresponding NEPA issue area analyses in the EIS. Issue areas are presented in the same order as the EIS and are shown in Table 1-1. The CEQA Initial Environmental Checklist Form tables are presented with each respective resource discussion in Chapter 2.

Table 1-1 CEQA/NEPA Analysis Index

CEQA Issue Areas[1]	*Comparable NEPA Issue Areas (includes Section # for the EIS)*
III. Air Quality	3.1 Air Quality
VIII. Greenhouse Gas Emissions	3.1 Air Quality
XVII. Transportation	3.2 Transportation
I. Aesthetics	3.3 Visual Resources
XI. Land Use/Planning	3.4 Land Use
XVI. Recreation	3.4 Land Use
XIV. Population/Housing (including growth inducement)	3.5 Socioeconomics
V. Cultural Resources	3.6 Cultural Resources
XVIII. Tribal Cultural Resources	3.6 Cultural Resources
IX. Hazards & Hazardous Materials	3.7 Hazardous Materials and Wastes
XX. Wildfire	3.8 Public Health and Safety
XV. Public Services	3.10 Public Services
VI. Energy	3.11 Infrastructure
XIX. Utilities/Service Systems	3.11 Infrastructure
XIII. Noise	3.13 Noise
VII. Geology/Soils	3.14 Geological Resources
XII. Mineral Resources	3.14 Geological Resources
X. Hydrology/Water Quality	3.15 Water Resources, 3.11 Infrastructure
IV. Biological Resources	3.16 Biological Resources
II. Agriculture and Forestry Resources	NA
XXI. Mandatory Findings of Significance	5 Other Considerations Required by NEPA

Note: (1) Appendix G of the Guidelines for Implementation of the CEQA.

1.4 No Action/No Project Alternative

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. NAVWAR would continue to operate at OTC and no change from the status quo would occur. The No Action Alternative will be used to analyze the consequences and potential environmental impacts of not undertaking the Proposed Action and will serve to establish a comparative baseline for analysis. Additional information on the No Action Alternative is in Section 2.3.1 of the EIS.

1.5 Alternative 4: Public-Private Development–NAVWAR and Higher Density Mixed Use with a Transit Center (Preferred Alternative)

This alternative would include the construction of new Navy facilities for NAVWAR on OTC through a public-private development agreement, and the relocation of some Naval Information Warfare Command Pacific functions. The development requirements for NAVWAR are listed in Table 1-2. Sustainable development concepts would be applied throughout the development with specific

Department of Defense (DoD) guidelines applied to the NAVWAR facilities. The public-private development for OTC includes mixed use (residential, hotel, office, and retail) and a transit center. Construction would begin in 2021 and continue for a period of approximately 30 years. The NAVWAR requirements would be constructed first, over a period of 5 years. Phasing over the remaining 25 years would be based on a variety of development and real estate factors. In general, it is assumed 25 percent of all uses (residential, commercial, retail, and hotel) would be developed by year 10, 45 percent by year 15, 65 percent by year 20, 85 percent by year 25, and full buildout accomplished by year 30. Table 1-2 presents the development assumptions for Alternative 4.

Table 1-2 Alternative 4 Development Assumptions

Development Details	*Alternative 4*
NAVWAR Redevelopment	***Total Square Feet (Equivalent Unit)***
Office	845,326
Laboratory	165,614
Secure Conference/Auditorium	29,156
Warehouse/Storage	24,172
Open Storage	Not applicable
Parking	630,000 - (2,000 stalls)
NAVWAR Redevelopment Total	**1,694,268**
Public-Private Development – Higher Density	***Total Square Feet (Equivalent Unit)***
Residential	9,600,000 - (10,000 units)
Residential-Parking	5,040,000 - (14,400 stalls)
Office	1,350,000
Office-Parking	708,750 - (2,025 stalls)
Hotel	290,000 - (2 hotels, 450 rooms)
Hotel-Parking	157,500 - (450 stalls)
Retail	250,000
Retail-Parking	183,750 - (525 stalls)
Transit Center	140,000
Transit Center-Parking	175,000 - (500 stalls)
Public-Private Development Total	**17,895,000**
GRAND TOTAL	**19,589,268**

Note*:* (1) Parking square feet is estimated to accommodate all the use types included under this alternative.

Additional information on Alternative 4 is provided in Section 2.3.6 of the EIS.

1.6 Alternative 5: Public-Private Development–NAVWAR and Lower Density Mixed Use with a Transit Center

This alternative is similar to what is described above for Alternative 4, but the development envelope for private development is slightly reduced. The development requirements for NAVWAR are the same as under Alternative 2. Table 1-3 presents the development assumptions for Alternative 5.

Table 1-3 Alternative 5 Development Details

Development Details	***Alternative 5***
NAVWAR Redevelopment	***Total Square Feet (Equivalent Unit)***
Office	845,326
Laboratory	165,614
Secure Conference/Auditorium	29,156
Warehouse/Storage	24,172
Open Storage	Not applicable
Parking	630,000 - (2,000 stalls)
NAVWAR Redevelopment Total	**1,694,268**
Public-Private Development – Lower Density	***Total Square Feet (Equivalent Unit)***
Residential	7,680,000 - (8,000 units)
Residential-Parking	4,032,000 - (11,520 stalls)
Office	850,000
Office-Parking	446,250 - (1,275 stalls)
Hotel	290,000 - (2 hotels, 450 rooms)
Hotel-Parking	157,500 - (450 stalls)
Retail	200,000
Retail-Parking	147,000 - (420 stalls)
Transit Center	140,000
Transit Center-Parking	175,000 - (500 stalls)
Public-Private Development Total	**14,117,750**
GRAND TOTAL	**15,812,018**

Note: [1] Parking square feet is estimated to accommodate all the use types included under this alternative.

Additional information on Alternative 5 is provided in Section 2.3.7 of the EIS.

2 Environmental Impact Analysis

This section provides the environmental impact analysis based on criteria set forth in Appendix G of the Guidelines for Implementation of the CEQA. The chapter is organized consistent with the NEPA resource ordering in Chapters 3 and 4 of the EIS (see Table 1-1 for a comparison of CEQA and NEPA resources addressed in this document). The approach for levels of impact significance common to all resources analyzed in this appendix is described below:

- Potentially Significant: An impact is considered *potentially significant* if the analysis concludes that it could have a substantial adverse effect on the environment.
- Less Than Significant with Mitigation Incorporated: An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments that have been made by the applicant of the Proposed Action.
- Less Than Significant: An impact is considered *less than significant* if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- No Impact: A finding of *no impact* is appropriate if the analysis concludes that the Proposed Action would not affect the particular topic area in any way.
- Mitigation: Mitigation under CEQA includes:

o Avoiding the impact altogether by not taking a certain action or parts of an action.

o Minimizing impact by limiting the degree or magnitude of the action and its implementation.

o Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

o Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

o Compensating for the impact by replacing or providing substitute resources or environments.

- Residual Impacts: A Residual impact is any impact that would remain as a result of the project after mitigation has been implemented, or that could not be fully avoided or eliminated by mitigation.

CEQA does not require a co-equal level of analysis for all alternatives. Therefore, a detailed analysis for each significance criterion is presented for Alternative 4 as the preferred project, and a summary of similarities and differences is provided for Alternative 5.

2.1 Air Quality and Greenhouse Gas Emissions

This section presents estimates of air quality and greenhouse gas (GHG) impacts that could occur under CEQA from implementation of project Alternatives 4 and 5. The region of influence (ROI) for assessing air quality impacts includes the immediate area surrounding OTC and the larger San Diego Air Basin (SDAB). Effects on air quality are based on estimated direct and indirect emissions associated with a project alternative. The analysis considered CEQA impacts related to air quality and GHG plan consistency, criteria pollutant emissions, ambient carbon monoxide (CO) hot spots, Toxic Air Contaminant (TAC) exposures, and GHG emissions. The EIS Appendix D includes detailed emissions inputs and calculation methods for each project alternative. Descriptions of the regulatory setting, environmental setting, and impact analysis approach are presented in EIS Sections 3.1.3, 3.1.4, and 3.1.5.2, respectively.

2.1.1 Impacts Determination

2.1.1.1 Impacts Summary

Table 2.1-1 presents a summary of impacts related to air quality and GHG emissions for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.1-1 Impacts Related to Air Quality and Greenhouse Gas Emissions

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
III. Air Quality (AQ-) Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	-	-	-	-
a) Conflict with or obstruct implementation of the applicable air quality plan?	**X**	-	-	-
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	-	**X**	-	-
c) Expose sensitive receptors to substantial pollutant concentrations?	**X**	-	-	-
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	-	-	**X**	-
VIII. Greenhouse Gas Emissions (GHG-) Would the project:	-	-	-	-
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	-	-	**X**	-
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	-	-	**X**	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

Approach for the Determination of Significance

To evaluate Criterion AQ-a, the analysis determined consistency of Alternatives 4 and 5 with the Regional Air Quality Strategy (RAQS), which the San Diego Air Pollution Control District (SDAPCD) developed to attain the California ambient air quality standards. The analysis also determined consistency of Alternatives 4 and 5 with the applicable federal air quality plan (i.e., the State Implementation Plans [SIPs]), based on the General Conformity applicability findings in EIS Section 3.1.5.7).

Regarding Criterion AQ-b, the SDAPCD established emission thresholds to determine when a new or modified stationary source would require an air quality analysis. The city included these thresholds in its CEQA Significance Determination Thresholds as a consideration when determining the potential significance of air quality impacts for projects within the city (City of San Diego, 2016a). These thresholds are shown in Table 2.1-2 and were used as screening-level thresholds to evaluate whether project-related emissions would potentially cause a significant impact on air quality. Emissions less than the screening-level thresholds would not cause a significant impact under CEQA. Additionally, the analysis included a discussion under this criterion linking the project's significant criteria pollutant emissions to potential adverse human health effects.

Table 2.1-2 Air Quality Impact Screening Emission Thresholds

Pollutant[(1)(2)]	*Pounds per Day*	*Tons per Year*
NO_x	250	40
SO_x	250	40
CO	550	100
PM_{10}	100	15
VOC	137	15
$PM_{2.5}$[(3)]	67	10

Legend: NO_x = Nitrogen oxides; SO_x = sulfur oxides; CO = carbon monoxide; PM_{10} = particulate matter less than 10 microns in diameter; VOC = volatile organic compounds; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter.

Notes: (1) The city also provided maximum hourly thresholds of 25 pounds per hour for NO_x and SO_x, and 100 pounds per hour for CO. However, this analysis used only the daily and annual thresholds because CalEEMod generates only daily and annual emissions.

(2) The city also provided thresholds for lead; however, lead emissions were not quantified because the alternatives would have no source of substantial lead emissions (see EIS Section 3.1.4). Management Measure HAZ MGMT-1 (see EIS Section 3.7.3.7) would require the Navy to complete a demolition plan to prevent emissions associated with lead-based paint during demolition.

(3) The city did not set a threshold for $PM_{2.5}$. However, SDAPCD Resolution 16-041, adopted on April 27, 2016, amended Rule 20.2 to include a threshold for $PM_{2.5}$.

Source: City of San Diego, 2016.

Regarding Criterion AQ-c, the analysis conducted a quantitative health risk assessment (HRA) of diesel particulate matter (DPM) emissions associated with construction of Alternatives 4 and 5. The HRA results were compared to the following SDAPCD thresholds to determine significance (SDAPCD, 2013):

- Maximum incremental cancer risk equal to or greater than 10 in 1 million.
- Cancer burden equal to or greater than 1.0.
- Total chronic noncancer health hazard index equal to or greater than 1.0.

For operational TAC emissions, the analysis provides a qualitative discussion of the potential for impacts to sensitive receptors. The analysis also referred to EIS Section 3.1.5, *Air Quality*, for evaluations of the potential for (a) project-generated traffic to contribute to CO hot spots; (b) nearby emission sources to expose future project residents to TACs; and (c) project demolition to expose sensitive receptors to airborne hazardous materials, such as asbestos, lead-based paint, polychlorinated biphenyls (PCBs), and mercury.

Regarding Criterion AQ-d, the analysis evaluated the potential for project construction and operation to generate odors that would impact a considerable number of receptors.

Regarding Criterion GHG-a, the analysis quantified construction and operational GHG emissions for Alternatives 4 and 5. Neither the SDAPCD nor the City of San Diego has adopted mass emission thresholds for GHG emissions under CEQA. Therefore, this analysis evaluated the significance of GHG impacts by determining consistency of Alternatives 4 and 5 with the City of San Diego Climate Action Plan (CAP) (City of San Diego, 2016b), as presented under the evaluation of Impact Criterion GHG-b. The CAP Final Program EIR and amendment serve as a Qualified GHG Reduction Plan under CEQA Guidelines section 15183.5 (City of San Diego, 2015; City of San Diego, 2016c). CEQA Guidelines section 15183.5 permits discretionary projects under CEQA that are consistent with the CAP to tier off the GHG analysis in the CAP Final Program EIR. A project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if the project complies with the requirements of the CAP. Compliance with the CAP is determined by assessing the project with respect to the CAP Checklist (City of San Diego, 2017).

Relative to Criterion GHG-b, the analysis evaluated consistency of Alternatives 4 and 5 with applicable plans related to GHG emissions, including the CAP Checklist as presented in the city's CEQA Significance Determination Thresholds.

2.1.1.2 No Action/No Project Alternative Impacts

The impacts of the No Action Alternative for air quality and GHG emissions are described in EIS Section 3.1.5.3, *Air Quality*. The No Action Alternative would result in less than significant impacts to air quality and GHG emissions.

2.1.1.3 Alternative 4 Impacts

AQ-a: Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impacts.

Consistency with the RAQS

Projects that are consistent with the assumptions and emission forecasts used in the development of the RAQS are considered to not conflict with or obstruct implementation of the RAQS. The RAQS emissions forecasts rely on projections of vehicle miles traveled (VMT) by SANDAG, and population, employment, and land use projections made by the City of San Diego during development of the general plan and area plans. As such, a development project that is consistent with the growth anticipated by the general plan and applicable area plan would be consistent with the RAQS. If a development project would exceed the plans' growth projections, the project would conflict with the RAQS and could potentially result in a significant air quality impact.

OTC lies within the 1,324-acre Midway-Pacific Highway Community. OTC, the U.S. Marine Corps Recruit Depot, and commercial land uses comprise most of the land area in the community. The community also includes some industrial, residential, and institutional uses. The city's current Midway-Pacific Highway Community Plan (Community Plan) provides community development assumptions for a 30-year planning horizon (year 2045). Table 2.1-3 lists these assumptions and compares them to proposed Alternative 4 at buildout. The table shows that Alternative 4 would account for more than 60 percent of the population growth and nearly 100 percent of the dwelling unit growth forecast for the entire community in the Community Plan. Alternative 4 would also generate about three times the jobs growth and six times the nonresidential building space growth forecast for the entire community in the Community Plan.

Table 2.1-3 Development Assumptions for Alternative 4 Compared to the Midway-Pacific Highway Community

Land Use Metric	*Community Plan Horizon Year Assumption(1)*	*Alternative 4 Buildout(2)*	*Alternative 4 Percent of Community Plan Assumption*
Increase in residents	23,660	14,364	61%
Increase in dwelling units	10,155	10,000	98%
Increase in jobs	4,370	13,273	304%
Increase in nonresidential square feet	300,000	1,831,754	611%

Notes: (1) *Midway-Pacific Highway Community Plan*, Table 2-2 (City of San Diego, 2018). Horizon year is 2045 (30 years after base year).
(2) Alternative 4 data for residents, dwelling units, and nonresidential square feet are from the EIS Appendix D, Table D3.1-19 (Alternative 4 minus existing; parking structures were excluded from nonresidential square feet). Alternative 4 data for jobs are from EIS Section 3.5, *Socioeconomics*, which reported 18,241 jobs at buildout, minus 4,968 employees at the existing OTC (G. Geisen, NAVWAR, personal communication, February 17, 2020).

At the individual level, Alternative 4 would be within the residential growth projections, but above the employment and commercial growth projections for the Midway-Pacific Highway Community. At the cumulative level, Alternative 4, in conjunction with other proposed residential and mixed-use projects, would most likely exceed the residential growth projections for the Midway-Pacific Highway Community. (For additional information on these projections, see Section 2.4, *Land Use*, Impact LU-b.) Therefore, Alternative 4—both individually and in combination with other projects considered in the cumulative setting—would generate vehicular emissions that exceed the levels estimated in the RAQS. As a result, Alternative 4 would conflict with implementation of the RAQS and could have a potentially significant impact on regional air quality.

Consistency with the State Implementation Plan

With respect to the national ambient air quality standards, EIS Section 3.1.5.7 demonstrated that Volatile Organic Compound (VOC) and nitrogen oxides (NO_x) emissions associated with construction and operation of Alternative 4 would be less than the applicable General Conformity *de minimis* thresholds. Therefore, Alternative 4 would not conflict with or obstruct implementation of the SIP.

Mitigation Measures and Residual Impacts

The mitigation measure described below would help reduce the potentially significant impacts related to conflicts with the RAQS.

> **MM AQ-1.** Within 6 months of the completion of the Record of Decision, and every 3 years thereafter until buildout, the Navy shall provide SANDAG with population and employment projections for OTC, which should be used by (1) SANDAG to update its regional growth projections; and (2) the SDAPCD to update the emission estimates and forecasts presented in its regional air quality plans.

MM AQ-1 would reduce significant impacts of Alternative 4 by requiring the Navy to provide the information needed to update the RAQS. However, as updates to the air quality plans are within the SDAPCD's jurisdiction, the effectiveness of this mitigation measure cannot be guaranteed at this time. The impact would remain significant and unavoidable.

AQ-b: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Less than Significant Impacts with Mitigation. The air quality analysis used California Emissions Estimator Model (CalEEMod) version 2016.3.2 to quantify criteria pollutant emissions from construction and operation of Alternative 4 (California Air Pollution Control Officers Association, 2016). Appendix D from the EIS presents details of the analysis inputs and calculation methods. Inclusion of air quality management practices into proposed construction and operational activities would reduce emissions. EIS Section 3.1.5.9 presents the air quality construction and operational management practices proposed for Alternative 4. The analysis quantified the effects of the following construction management practices:

- AQ MGMT-1. Fugitive Dust Control Plan, which would reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by at least 55 percent from uncontrolled levels.
- AQ MGMT-3. Implementation of U.S. Environmental Protection Agency (USEPA) Nonroad Final Tier 4 emission standards, which would reduce emissions on average from the baseline fleet of off-road diesel-powered construction equipment greater than 50 horsepower.

The analysis quantified the effects of the following operational management practices:

- AQ MGMT-12. Implementation of USEPA Nonroad Final Tier 4 emission standards, which would reduce emissions on average from the baseline fleet of off-road diesel-powered operations equipment greater than 50 horsepower.
- AQ MGMT-14. The project would incorporate sustainable landscape design where feasible, including:

o Plant trees to provide shade and carbon dioxide (CO_2) absorption.
o Use drought-tolerant native vegetation.
o Reduce use of lawn types that require high levels of irrigation.
o Use high efficiency irrigation technology or recycled site water. CalEEMod assumed this measure would reduce outdoor water use by 6.1 percent. The effects of other parts of this measure were not quantified.
o Design buildings to capture and store rainwater for landscape irrigation.

Operational air quality management practices that propose vehicle trip reduction methods and implementation of transit, bicycle, and pedestrian measures (AQ MGMT-23 through AQ MGMT-30) were not directly quantified by the air quality analysis. However, the vehicle trip rates developed by the EIS traffic study and used in the air quality analysis included reductions to account for transit, bicycle, and pedestrian modes of travel and a mixed-use benefit. All other construction and operational management practices described in EIS Section 3.1.5.9 were not quantified due to model limitations and uncertainty in the degree of implementation.

Under Alternative 4, construction of the Navy facilities would occur from 2021 through 2025 on OTC Site 2. Full operation of the Navy facilities would begin in 2026. Construction of private development would occur from 2026 through 2049 on OTC Site 1 and OTC Site 2. Operation of private development would ramp up according to the sequence presented in EIS Table 3.1-9. Construction of the transit center would occur from 2026 through 2034. Operation of the transit center would begin in 2035. Because construction and operations would overlap beginning in 2026, the analysis determined the significance of the combined emissions of both activities starting in year 2026. The combined construction and operational emissions are presented in the operational emissions tables presented on the following pages.

Table 2.1-4 presents estimates of annual criteria pollutant emissions that would occur from construction of Alternative 4. For additional detail, Table 3.1-26 in EIS Section 3.1.5.7 shows the maximum annual construction emissions by source type. Application of architectural coatings would be the largest contributor to annual VOC emissions. Off-road construction equipment exhaust would be the largest contributor to annual NO_x, CO, and sulfur oxides (SO_x) emissions. Fugitive dust from demolition and the operation of equipment on bare soils would be the largest contributor to on-site annual suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}) and fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) emissions. Paved road dust from truck trips and worker vehicles would be the largest contributor to off-site annual PM_{10} and $PM_{2.5}$ emissions. Table 2.1-4 shows that the maximum annual construction emissions would be below the SDAPCD annual screening thresholds for all pollutants.

Table 2.1-5 presents estimates of maximum daily criteria pollutant emissions that would occur from construction of Alternative 4. For additional detail, Table 2.1-6 shows the maximum daily construction emissions by source type. Application of architectural coatings during construction of the private development would be the largest contributor to daily VOC emissions. Truck exhaust would be the largest contributor to daily NO_x and SO_x emissions. Off-road construction equipment exhaust would be the largest contributor to daily CO emissions. Fugitive dust from demolition and the movement of equipment on bare soils would be the largest contributor to on-site daily PM_{10} and $PM_{2.5}$ emissions. Road dust from worker trips and truck trips would be the largest contributor to off-site annual PM_{10} and $PM_{2.5}$ emissions.

Table 2.1-5 shows that the maximum daily construction emission of VOC would be above the SDAPCD daily screening threshold. The maximum daily construction emissions of all other criteria pollutants would be below the SDAPCD daily screening thresholds. Therefore, without mitigation, construction of Alternative 4 would result in a cumulatively considerable net increase of VOC emissions. VOC is a precursor to ozone, for which the region is nonattainment under both the state and national ambient air quality standards.

Table 2.1-4 Annual Construction Emissions, Alternative 4 (tons/year)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	1.1	3.7	14.9	0.04	2.3	0.7
2022	1.3	2.7	16.1	0.04	2.4	0.7
2023	1.2	2.5	15.6	0.04	2.4	0.7
2024	1.2	2.5	15.3	0.04	2.5	0.7
2025	4.1	2.0	12.9	0.03	2.1	0.6
2026	1.0	6.6	18.1	0.05	3.2	0.9
2027	1.9	8.3	29.7	0.08	4.0	1.2
2028	3.8	8.1	28.8	0.07	4.0	1.2
2029	3.5	6.9	24.8	0.06	3.5	1.0
2030	3.6	8.2	28.0	0.08	3.8	1.1
2031	3.5	7.7	27.8	0.08	4.0	1.1
2032	3.5	7.7	27.6	0.08	4.0	1.1
2033	3.4	7.5	27.2	0.07	4.0	1.1
2034	3.3	6.7	24.1	0.07	3.5	1.0
2035	2.9	8.1	23.1	0.07	1.9	0.6
2036	3.0	7.5	25.6	0.07	2.0	0.6
2037	2.9	7.2	24.0	0.06	1.9	0.6
2038	2.9	7.2	24.0	0.06	1.9	0.6
2039	2.9	7.2	23.9	0.06	1.9	0.6
2040	2.9	7.1	23.7	0.06	1.9	0.6
2041	2.9	7.1	23.7	0.06	1.9	0.6
2042	2.9	7.1	23.7	0.06	1.9	0.6
2043	2.9	7.1	23.7	0.06	1.9	0.6
2044	2.9	7.1	23.7	0.06	1.9	0.6
2045	2.8	7.0	23.5	0.06	1.9	0.6
2046	2.8	7.0	23.6	0.06	1.9	0.6
2047	2.8	7.0	23.6	0.06	1.9	0.6
2048	2.8	7.1	23.7	0.06	1.9	0.6
2049	2.6	4.9	16.9	0.04	1.4	0.4
Maximum Annual Emissions	**4.1**	**8.3**	**29.7**	**0.08**	**4.0**	**1.2**
SDAPCD Threshold	**15**	**40**	**100**	**40**	**15**	**10**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Table 2.1-5 Maximum Daily Construction Emissions, Alternative 4 (pounds per day)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	15.1	122.8	197.2	0.7	29.7	9.4
2022	10.7	21.1	127.1	0.3	19.3	5.5
2023	10.2	19.4	123.0	0.3	19.2	5.5
2024	9.7	18.8	119.5	0.3	19.2	5.4
2025	328.7	19.5	133.9	0.3	22.9	6.4
2026	20.2	149.1	335.4	1.1	45.6	13.7
2027	15.9	65.6	243.3	0.6	31.8	9.2
2028	1,185.5	64.0	251.7	0.6	37.0	10.6
2029	1,185.0	63.2	248.7	0.6	37.0	10.6
2030	1,186.9	140.0	324.0	1.1	45.5	13.5
2031	1,189.3	60.6	241.9	0.7	36.8	10.3
2032	1,191.8	60.1	239.2	0.7	36.7	10.3
2033	1,194.4	59.6	236.8	0.6	36.7	10.3
2034	1,197.0	59.2	234.5	0.6	36.7	10.3
2035	1,193.4	130.8	290.5	1.0	29.3	9.1
2036	1,193.8	57.6	208.7	0.5	20.3	5.8
2037	1,194.2	56.5	208.3	0.5	20.1	5.8
2038	1,194.7	56.5	207.9	0.5	19.8	5.7
2039	1,195.1	56.4	207.5	0.5	19.6	5.7
2040	1,195.0	55.5	204.9	0.5	19.4	5.6
2041	1,195.4	55.5	204.5	0.5	19.2	5.5
2042	1,195.8	55.5	204.2	0.5	19.0	5.5
2043	1,196.2	55.5	203.8	0.5	18.8	5.4
2044	1,196.6	55.4	203.4	0.5	18.5	5.4
2045	1,196.8	55.1	202.1	0.5	18.3	5.3
2046	1,197.3	55.1	201.7	0.5	18.1	5.2
2047	1,197.7	55.1	201.4	0.5	17.9	5.2
2048	1,198.1	55.0	201.0	0.5	17.7	5.1
2049	1,198.5	55.0	200.6	0.5	17.5	5.1
Maximum Daily Emissions	**1,198.5**	**149.1**	**335.4**	**1.1**	**45.6**	**13.7**
SDAPCD Threshold	**137**	**250**	**550**	**250**	**100**	**67**
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Table 2.1-6 Maximum Daily Construction Emissions by Source Category, Alternative 4 (pounds per day)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Fugitive Dust	--[1]	--	--	--	29.4	7.7
Off-Road Equipment	6.2	30.4	228.7	0.4	0.9	0.9
Paving Off-Gas	3.5	--	--	--	--	--
Architectural Coating	1,191.3	--	--	--	--	--
Truck Trips	3.6	113.3	45.8	0.5	12.7	3.6
Worker Trips	10.7	5.7	63.7	0.2	33.0	8.8
All Source Categories[2]	**1,198.5**	**149.1**	**335.4**	**1.1**	**45.6**	**13.7**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter.

Notes: [1] Source type does not emit that pollutant.

[2] The individual source category emissions do not sum to equal the “All Source Categories” emissions because not all the emissions would occur on the same day.

Tables 2.1-7 and 2.1-8 present estimates of annual and maximum daily criteria pollutant emissions, respectively, that would occur from operation of Alternative 4 for each analysis year and the peak emissions year. Emissions in years prior to 2050 include concurrent construction emissions. The emissions in years 2035 and 2050 include the increases in transit center vehicle trips relative to 2020 existing conditions. The EIS Appendix D Tables D3.1-77, D3.1-81, and D3.1-82 present annual and maximum daily operational emissions by source category. Exhaust from vehicle trips generated by the Alternative 4 land uses would be the largest contributor to operational NO_x, CO, and SO_x emissions. Paved road dust from vehicle trips would be the largest contributor to operational PM_{10} and $PM_{2.5}$ emissions. Use of consumer products would be the largest contributor to operational VOC emissions.

Tables 2.1-7 and 2.1-8 show that annual and maximum daily criteria pollutant emissions would reach their peaks in 2048 and 2049, when construction would occur together with operation of the development near capacity. Emissions in the buildout year of 2050 would be less than the peak year emissions because there would be no construction in 2050. Operational emissions after 2050 would likely follow a gradually declining trend in response to the effects of future air quality regulations and technological innovations.

Table 2.1-7 compares the annual incremental emissions of Alternative 4 (i.e., Alternative 4 minus 2020 existing conditions) to the SDAPCD annual screening thresholds. These data show that the annual VOC increment would be above the threshold in 2035, the peak year of 2049, and 2050. The annual NO_x increment would be above the threshold in the peak year of 2048 and 2050. The annual PM_{10} increment would be above the threshold in 2035, the peak year of 2048, and 2050. The annual CO, SO_x, and $PM_{2.5}$ increments would be below the thresholds in all years.

Table 2.1-7 Annual Operational Emissions, Alternative 4 (tons per year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	1.0	6.6	18.1	0.1	3.2	0.9
Operation	4.4	4.1	9.5	0.0	3.3	1.0
Total Alternative 4	**5.4**	**10.6**	**27.7**	**0.1**	**6.4**	**1.8**
CEQA Baseline(1)	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 4 Increment(2)	**-0.8**	**0.5**	**5.4**	**0.0**	**0.8**	**0.1**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	3.6	8.2	28.0	0.1	3.8	1.1
Operation	17.1	16.3	34.5	0.1	12.8	3.6
Total Alternative 4	**20.6**	**24.6**	**62.5**	**0.2**	**16.7**	**4.7**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 4 Increment	**14.4**	**14.4**	**40.3**	**0.1**	**11.0**	**3.0**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	2.9	8.1	23.1	0.1	1.9	0.6
Operation	26.4	25.1	46.9	0.2	18.9	5.3
Total Alternative 4	**29.3**	**33.2**	**70.1**	**0.3**	**20.8**	**5.9**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 4 Increment	**23.0**	**23.1**	**47.8**	**0.2**	**15.2**	**4.2**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Year 2050(3)						
Operation	51.1	50.1	69.3	0.3	26.7	7.6
Total Alternative 4	**51.1**	**50.1**	**69.3**	**0.3**	**26.7**	**7.6**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 4 Increment	**44.8**	**40.0**	**47.1**	**0.2**	**21.1**	**5.9**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**
Maximum Year(4)						
Construction	2.6	7.1	23.7	0.1	1.9	0.6
Operation	49.4	46.7	66.4	0.3	25.7	7.3
Total Alternative 4	**52.1**	**53.8**	**90.0**	**0.3**	**27.6**	**7.9**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 4 Increment	**45.8**	**43.7**	**67.8**	**0.3**	**22.0**	**6.2**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: (1) The CEQA baseline is OTC existing conditions (2020).
(2) Increment = Alternative minus CEQA Baseline. The Alternative 4 VOC increment in 2026 is slightly negative, as the Alternative would have lower emissions in 2026 than 2020 existing conditions.
(3) Assumes there would be no construction in 2050.
(4) Maximum emissions would occur in year 2049 for VOC and 2048 for all other pollutants.

Table 2.1-8 Maximum Daily Operational Emissions, Alternative 4 (pounds per day)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	20.2	149.1	335.4	1.1	45.6	13.7
Operation	26.6	29.8	83.9	0.3	25.5	7.3
Total Alternative 4	**46.8**	**178.9**	**419.3**	**1.4**	**71.1**	**21.1**
CEQA Baseline[1]	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment[2]	**5.0**	**96.0**	**239.0**	**0.8**	**27.2**	**7.7**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	1,186.9	140.0	324.0	1.1	45.5	13.5
Operation	100.1	104.3	246.7	0.9	86.6	24.3
Total Alternative 4	**1,287.0**	**244.3**	**570.7**	**2.0**	**132.1**	**37.8**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**1,245.2**	**161.4**	**390.4**	**1.5**	**88.2**	**24.5**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	1,193.4	130.8	290.5	1.0	29.3	9.1
Operation	153.1	157.3	329.1	1.3	125.1	35.0
Total Alternative 4	**1,346.5**	**288.2**	**619.6**	**2.2**	**154.4**	**44.1**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**1,304.7**	**205.2**	**439.3**	**1.7**	**110.5**	**30.8**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Year 2050[3]						
Operation	293.4	310.2	485.0	1.9	175.0	49.4
Total Alternative 4	**293.4**	**310.2**	**485.0**	**1.9**	**175.0**	**49.4**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**251.6**	**227.3**	**304.8**	**1.3**	**131.0**	**36.1**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Maximum Year[4]						
Construction	1,198.5	55.0	200.6	0.5	17.5	5.1
Operation	284.0	300.0	474.6	1.8	171.6	48.4
Total Alternative 4	**1,482.5**	**355.0**	**675.2**	**2.4**	**189.1**	**53.5**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**1,440.7**	**272.1**	**495.0**	**1.8**	**145.2**	**40.2**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: [1] The CEQA baseline is OTC existing conditions (2020).
[2] Increment = Alternative minus CEQA Baseline.
[3] Assumes there would be no construction in 2050.
[4] Maximum emissions would occur in year 2049 for all pollutants.

Table 2.1-8 compares the maximum daily incremental emissions of Alternative 4 (i.e., Alternative 4 minus 2020 existing conditions) to the SDAPCD daily screening thresholds. These data show that the daily VOC increment would be above the threshold in 2030, 2035, the peak year of 2049, and 2050. The daily NO_x increment would be above the threshold only in the peak year of 2049. The daily PM_{10} increment would be above the threshold in 2035, the peak year of 2049, and 2050. The daily CO, SO_x, and $PM_{2.5}$ increments would be below the thresholds in all years.

In summary, Tables 2.1-7 and 2.1-8 show that operation of Alternative 4 would result in cumulatively considerable net increases of annual and daily VOC, NO_x, and PM_{10} emissions. VOC and NO_x are precursors to ozone, for which the region is nonattainment under both the state and national ambient air quality standards. The region is also nonattainment for PM_{10} under the state ambient air quality standards.

Mitigation Measures and Residual Impacts

As mentioned above, Alternative 4 would implement several management practices to minimize criteria pollutant emissions during construction (see EIS Section 3.1.5.9). For example, construction would proceed under a demolition plan and a fugitive dust plan. In addition, all off-road diesel-powered construction equipment greater than 50 horsepower would meet Tier 4 emission standards.

The high daily VOC emissions estimated for construction of Alternative 4 (see Tables 2.1-4 and 2.1-5) are a result of conservative default assumptions in CalEEMod. Specifically, CalEEMod assumed that all architectural coating activities over the entire 5-year construction period for Navy development would occur on only 20 work days. For private development, CalEEMod assumed all architectural coating activities over the entire 24-year construction period would occur on only 75 work days. The number of architectural coating work days assumed by CalEEMod is based on the number of acres developed rather than the building floor space constructed. For a high-density development project like Alternative 4, where there is a high ratio of building floor space to acres, the CalEEMod default assumption for work days is unrealistically low. Therefore, this analysis developed a mitigation measure to limit the daily amount of coating application such that the maximum daily construction VOC emissions from architectural coating and all other construction activities would remain just below the SDAPCD screening threshold of 137 pounds per day. This approach resulted in a daily limit of 119 pounds per day of VOC emissions from applied architectural coatings. This measure would effectively spread out the architectural coating activities over a much greater number of work days (a minimum of 54 Navy development work days and 751 private development work days) than the work days estimated by CalEEMod.

MM AQ-2. The contractor shall limit the quantity of architectural coatings applied during construction so that VOC emissions would not exceed 119 pounds per day in the applied coatings.

- At the current SDAPCD VOC limit of 50 grams per liter for general flat coatings (SDAPCD Rule 67.0.1 [Architectural Coatings] [SDAPCD, 2020]), this measure equates to a daily limit of 285 gallons of coatings per day.
- The daily limit for other coatings would be determined using the following formula: quantity of coating (gallons per day) = 285 x 50/(VOC content of other coatings in grams per liter).

For consistency between the NEPA and CEQA analyses, EIS Section 3.1.5.9 proposes MM AQ-2 as management practice AQ MGMT-5, even though it is not needed to reduce a significant impact under NEPA.

In addition to its mixed-use benefit and transit center, Alternative 4 incorporates several management practices to minimize operational criteria pollutant emissions. For example, the Navy would use on-site diesel warehouse equipment and standby generators that meet the cleanest Tier 4 emission standards. EIS Section 3.1.5.9 describes other air quality management practices that would help to minimize both criteria pollutant and GHG emissions during proposed operation. In addition, Section 3.2.3.9 of the EIS, *Transportation*, recommends the implementation of a transportation demand management (TDM) program to reduce vehicular traffic and associated emissions. Therefore, no additional measures are feasible to mitigate operational criteria pollutant emissions.

Table 2.1-9 presents estimates of maximum daily criteria pollutant emissions that would occur from construction of Alternative 4 with implementation of MM AQ-2. These data show that the maximum daily construction emissions would be reduced to below the SDAPCD daily screening threshold for VOC. The maximum daily construction emissions of all other criteria pollutants would remain below the SDAPCD daily screening thresholds. Therefore, construction of Alternative 4 with mitigation would result in less than significant criteria pollutant emission impacts.

Table 2.1-10 presents estimates of maximum daily criteria pollutant emissions that would occur from operation of Alternative 4 with application of MM AQ-2 to the concurrent construction emissions. These data show that the daily VOC increment would be reduced but would remain above the SDAPCD daily screening threshold in 2030, 2035, the peak year of 2049, and in 2050 and subsequent years. The daily NO_x increment would remain above the threshold in the peak year of 2049. The daily PM_{10} increment would remain above the threshold in 2035, the peak year of 2049, and in 2050 and subsequent years. The daily CO, SO_x, and $PM_{2.5}$ increments would remain below the thresholds in all years. Therefore, with implementation of MM AQ-2, operation of Alternative 4 would result in cumulatively considerable net increases of daily VOC, NO_x, and PM_{10} emissions.

Health Effects Related to Criteria Pollutant Emissions

In *Sierra Club v. County of Fresno* (2018), the California Supreme Court ruled that an EIR for a proposed master-planned, mixed-use development in Fresno County known as Friant Ranch did not adequately relate the expected adverse air quality impacts to likely health consequences or explain in meaningful detail why it is not feasible at the time of drafting to provide such an analysis. In response to the Court's decision, this section identifies the significant criteria pollutant emissions estimated for Alternative 4 and their possible associated health effects on the population within the ROI. The potential for adverse health effects is evaluated qualitatively by considering proposed emissions in context with the regional emissions and attainment status. The discussion does not identify any new impacts under CEQA, but rather provides additional information related to the significant emissions already identified above in Impact AQ-b.

Table 2.1-9 Maximum Daily Construction Emissions, Alternative 4 with Mitigation (pounds per day)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	15.1	122.8	197.2	0.7	29.7	9.4
2022	10.7	21.1	127.1	0.3	19.3	5.5
2023	10.2	19.4	123.0	0.3	19.2	5.5
2024	9.7	18.8	119.5	0.3	19.2	5.4
2025	129.9	19.5	133.9	0.3	22.9	6.4
2026	20.2	149.1	335.4	1.1	45.6	13.7
2027	15.9	65.6	243.3	0.6	31.8	9.2
2028	135.9	64.0	251.7	0.6	37.0	10.6
2029	135.4	63.2	248.7	0.6	37.0	10.6
2030	134.2	140.0	324.0	1.1	45.5	13.5
2031	133.5	60.6	241.9	0.7	36.8	10.3
2032	132.9	60.1	239.2	0.7	36.7	10.3
2033	132.3	59.6	236.8	0.6	36.7	10.3
2034	131.8	59.2	234.5	0.6	36.7	10.3
2035	127.8	130.8	290.5	1.0	29.3	9.1
2036	127.7	57.6	208.7	0.5	20.3	5.8
2037	127.7	56.5	208.3	0.5	20.1	5.8
2038	127.6	56.5	207.9	0.5	19.8	5.7
2039	127.6	56.4	207.5	0.5	19.6	5.7
2040	126.9	55.5	204.9	0.5	19.4	5.6
2041	126.9	55.5	204.5	0.5	19.2	5.5
2042	126.8	55.5	204.2	0.5	19.0	5.5
2043	126.8	55.5	203.8	0.5	18.8	5.4
2044	126.7	55.4	203.4	0.5	18.5	5.4
2045	126.4	55.1	202.1	0.5	18.3	5.3
2046	126.4	55.1	201.7	0.5	18.1	5.2
2047	126.3	55.1	201.4	0.5	17.9	5.2
2048	126.2	55.0	201.0	0.5	17.7	5.1
2049	126.2	55.0	200.6	0.5	17.5	5.1
Maximum Daily Emissions	**135.9**	**149.1**	**335.4**	**1.1**	**45.6**	**13.7**
SDAPCD Threshold	**137**	**250**	**550**	**250**	**100**	**67**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Note: (1) MM AQ-2 would limit the quantity of architectural coatings applied during construction so that VOC emissions would not exceed 119 pounds per day from applied coatings.

Table 2.1-10 Maximum Daily Operational Emissions, Alternative 4 with Mitigation (pounds per day)

Source Category	*VOC[1]*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	20.2	149.1	335.4	1.1	45.6	13.7
Operation	26.6	29.8	83.9	0.3	25.5	7.3
Total Alternative 4	**46.8**	**178.9**	**419.3**	**1.4**	**71.1**	**21.1**
CEQA Baseline[2]	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment[3]	**5.0**	**96.0**	**239.0**	**0.8**	**27.2**	**7.7**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	134.2	140.0	324.0	1.1	45.5	13.5
Operation	100.1	104.3	246.7	0.9	86.6	24.3
Total Alternative 4	234.4	**244.3**	**570.7**	**2.0**	**132.1**	**37.8**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**192.6**	**161.4**	**390.4**	**1.5**	**88.2**	**24.5**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	127.8	130.8	290.5	1.0	29.3	9.1
Operation	153.1	157.3	329.1	1.3	125.1	35.0
Total Alternative 4	280.9	**288.2**	**619.6**	**2.2**	**154.4**	**44.1**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**239.1**	**205.2**	**439.3**	**1.7**	**110.5**	**30.8**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Year 2050[4]						
Operation	293.4	310.2	485.0	1.9	175.0	49.4
Total Alternative 4	293.4	**310.2**	**485.0**	**1.9**	**175.0**	**49.4**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**251.6**	**227.3**	**304.8**	**1.3**	**131.0**	**36.1**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Maximum Year[5]						
Construction	126.2	55.0	200.6	0.5	17.5	5.1
Operation	284.0	300.0	474.6	1.8	171.6	48.4
Total Alternative 4	410.2	**355.0**	**675.2**	**2.4**	**189.1**	**53.5**
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 4 Increment	**368.4**	**272.1**	**495.0**	**1.8**	**145.2**	**40.2**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**Yes**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: (1) MM AQ-2 would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in applied coatings.
(2) The CEQA baseline is OTC existing conditions (2020).
(3) Increment = Alternative minus CEQA Baseline.
(4) Assumes there would be no construction in 2050.
(5) Maximum emissions would occur in year 2049 for all pollutants.

Impact AQ-b concluded that Alternative 4 operations and overlapping construction and operations would produce significant emissions of VOC, NO_x, and PM_{10}. VOC and NO_x are precursors to ozone and PM_{10} and NO_x is also a precursor to nitrogen dioxide (NO_2). Therefore, this analysis evaluated the potential for adverse health effects resulting from the contributions of the alternative to regional ozone, NO_2, and PM_{10} concentrations.

Ozone. The SDAB is currently in nonattainment of the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for ozone. EIS Table 3.1-3 shows that during the 2017-2018 period, the Kearny Villa Road monitoring station recorded ozone concentrations that were 113 percent of the state 1-hour standard, 120 percent of the state 8-hour standard, and 103 percent of the 2015 federal 8-hour standard. Furthermore, Table 2.1-10 shows that construction and operation of Alternative 4 would increase VOC emissions by 368 pounds per day and NO_x emissions by 272 pounds per day in the maximum emissions year. These emissions are considered significant because they would exceed the SDAPCD significance thresholds. Therefore, because Alternative 4 would produce significant emissions of ozone precursors in a region that is nonattainment for ozone, this analysis concludes that Alternative 4 would contribute to adverse health effects associated with exposure to ozone in the region. Appendix D, Section 2 of this EIS describes the health effects associated with human exposure to ozone.

A comparison to EIS Table 3.1-2 shows that Alternative 4 would increase regional VOC and NO_x emissions by a maximum of about 0.2 percent. This suggests that the effect of Alternative 4 emissions on ozone-related health effects in the region would be slight relative to the region's overall ozone-related health effects.

NO_2. The SDAB is currently in attainment of the CAAQS and NAAQS for NO_2. EIS Table 3.1-3 shows that NO_2 concentrations recorded at the Beardsley Street or Kearny Villa Road monitoring station from 2016 through 2018 were no higher than 57 percent of its respective state or federal standard. Furthermore, as stated above in the discussion on ozone, Alternative 4 would increase regional NO_x emissions by a maximum of about 0.2 percent. Therefore, because of the region's attainment status and the relatively slight increase in regional NO_2 emissions associated with Alternative 4, this analysis concludes that Alternative 4 would not cause or contribute to an exceedance of an NO_2 standard in the region. As a result, Alternative 4 would not contribute to adverse health effects associated with exposure to NO_2.

PM_{10}. The SDAB is currently in nonattainment of the CAAQS for PM_{10}. EIS Table 3.1-3 shows that in 2016, the Beardsley Street monitoring station recorded a PM_{10} concentration that was 102 percent of the state 24-hour standard and the Chula Vista monitoring station recorded a PM_{10} concentration that was 109 percent of the state annual standard. Furthermore, Table 2.1-10 shows that construction and operation of Alternative 4 would increase PM_{10} emissions by 145 pounds per day in the maximum emissions year. This emission rate is considered significant because it would exceed the SDAPCD significance threshold. Therefore, because Alternative 4 would produce significant emissions of PM_{10} in a region that is nonattainment for PM_{10}, this analysis concludes that Alternative 4 would contribute to adverse health effects associated with exposure to PM_{10} in the region. Appendix D, Section 2 of this EIS describes the health effects associated with human exposure to PM_{10}.

A comparison to EIS Table 3.1-2 shows that Alternative 4 would increase regional PM_{10} emissions by a maximum of about 0.09 percent. This suggests that the effect of Alternative 4 emissions on PM_{10}-related health effects in the region would be slight relative to the region's overall PM_{10}-related health effects.

Limitations to Further Analysis

This analysis links criteria pollutant emissions estimated for Alternative 4 to potential health effects qualitatively because technical and scientific limitations prevent the accurate quantification of health effects. Modeling tools presently exist that could theoretically estimate health effects for ozone and PM_{10}. They include, for example, the Community Multiscale Air Quality Modeling System, Comprehensive Air Quality Model with Extensions, and Environmental Benefits Mapping and Analysis Program (USEPA, 2019a, 2019b; Ramboll Environ, 2019). However, both the South Coast Air Quality Management District (SCAQMD) and San Joaquin Valley Air Pollution Control District (SJVAPCD) filed *amicus curiae* briefs with the California Supreme Court for the Friant Ranch case claiming that currently available regional modeling tools are not well suited to analyze relatively small changes in pollutant concentrations associated with individual projects (SCAQMD, 2015; SJVAPCD, 2015). Regional modeling tools are generally designed to be used at the national, state, regional, and/or city levels. They are not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area (SJVAPCD, 2015). For example, running a photochemical grid model used for predicting ozone attainment with the emissions solely from an individual project is not likely to yield valid information given the relative scale involved (SJVAPCD, 2015). SCAQMD stated that it does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects. The primary author of the California Air Resources Board (CARB) methodology for particulate matter mortality has reported that this methodology is not suited for small projects and may yield unreliable results due to various uncertainties (CARB, 2010; SCAQMD, 2015).

SCAQMD's own modeling shows that it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region and that it may only be feasible to analyze air quality-related health impacts for projects on a regional scale with very high emissions of NO_x and VOC. For example, SCAQMD's 2012 Air Quality Management Plan showed that reducing NO_x and VOC by 864,000 pounds per day and 374,000 pounds per day, respectively, would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. In another example, for its proposed Rule 1315, SCAQMD modeled approximately 89,180 pounds per day of VOC and 6,620 pounds per day of NO_x and predicted 20 premature deaths per year and 89,947 school absences per year due to the associated ambient ozone and PM exposures (SCAQMD, 2015). By comparison, Table 2.1-10 shows that the maximum VOC emissions from Alternative 4 would increase by 368 pounds per day (0.4 percent of the emissions evaluated for Rule 1315), and NO_x emissions would increase by 272 pounds per day (4 percent of the emissions evaluated for Rule 1315).

Notwithstanding these concerns expressed by the SCAQMD and SJVAPCD, the Sacramento Metropolitan Air Quality Management District (SMAQMD) published draft project-level Friant Ranch guidance in 2020 that provides screening emission thresholds specific to the Sacramento area and an approach for quantifying health effects using Comprehensive Air Quality Model with Extensions, Community Multiscale Air Quality Modeling System, or Environmental Benefits Mapping and Analysis Program (SMAQMD, 2020). In addition, there have been recent attempts at quantifying health effects for individual CEQA projects. For example, San Diego State University produced a report in December 2019 that estimated the health effects related to criteria pollutant emissions associated with the Mission Valley Campus Master Plan EIR (San Diego State University, 2019). The study used both the Comprehensive Air Quality Model with Extensions and Environmental Benefits Mapping and Analysis Program to model Mission Valley project emissions of 314 pounds per day of Reactive Organic Gas (essentially equivalent to VOC), 1,121 pounds per day of NO_x, and 206 pounds per day of $PM_{2.5}$. The study estimated that the health effects related to exposure to ozone and $PM_{2.5}$ would be negligible compared to background incidences. Specifically, for all the health endpoints quantified, the number of estimated incidences would be less than 0.004 percent of the background health incidence. The "background health incidence" is the actual incidence of health effects as measured in the local population in the absence of additional emissions from the Mission Valley project. In addition, the San Diego State University study acknowledged that the results may be overstated because the study "presumes that effects seen at large concentration differences can be linearly scaled down to (i.e., correspond to) small increases in concentration, with no consideration of potential thresholds below which health effects may not occur", and "health effects presented in this report are conservatively estimated, and the actual effects may be zero."

AQ-c: Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impacts.

HRA of Construction DPM Emissions

Construction of Alternative 4 would produce an estimated 3,271 pounds of on-site DPM emissions over the 29-year construction period (see Table D-35 of the EIS Appendix D). CARB has designated DPM as a TAC. Under California Office of Environmental Health Hazard Assessment risk assessment guidance, DPM is used as a surrogate for the complex mixture of chemicals that make up whole diesel exhaust. DPM is the main driver of cancer risk from construction equipment. Therefore, this analysis performed an HRA of DPM emissions associated with construction-related equipment and trucks operating on-site during construction of Alternatives 4 and 5. The HRA was prepared in accordance with guidance from the Office of Environmental Health Hazard Assessment and the SDAPCD (Office of Environmental Health Hazard Assessment, 2015; SDAPCD, 2019).

The HRA quantified the following types of health impacts:

- Individual cancer risk, which is the additional chance for a person to contract cancer after long-term (multiple year) exposure to project TAC emissions.
- Population cancer burden, which is the expected number of additional cancer cases within the project's zone of impact. The zone of impact is defined as the geographical area where the project's 70-year individual lifetime cancer risk is equal to or greater than one chance in a million.
- The chronic hazard index, which is a ratio of long-term TAC exposures to TAC reference exposure levels. A chronic hazard index below 1.0 indicates that adverse noncancer health effects on a particular human organ system (target organ) from long-term exposure are not expected.

The HRA results are summarized here. Appendix D from the EIS contains the full HRA report.

The HRA performed air dispersion modeling using the USEPA AERMOD dispersion model (USEPA, 2019c) with meteorological data from the San Diego International Airport. The Hot Spots Analysis & Reporting Program (CARB, 2019) estimated the health risks using the AERMOD output. The HRA quantified health risks to off-site receptor points classified as residential, worker, and nonresidential sensitive. Sensitive receptors represent locations where persons especially susceptible to adverse health effects from TACs (i.e., children, the elderly, and the ill) would be expected to congregate. They include schools (grades

Kindergarten through 12), day care centers, nursing homes, retirement homes, health clinics, and hospitals.

Table 2.1-11 presents the maximum predicted health impacts from construction of Alternative 4. The table includes estimates of individual cancer risk and chronic noncancer hazard index at the maximally exposed off-site residential, worker, and sensitive receptors.

Table 2.1-11 Summary of Health Risk Impacts from Construction of Alternative 4

Receptor Type	*Maximum Cancer Risk (chances in a million)*	*Maximum Chronic Noncancer Hazard Index*
Residential	12.5	0.004
Worker	8.8	0.03
Sensitive	12.7	0.03
Significance Threshold	**10**	**1.0**
Exceeds Threshold?	**Yes**	**No**

The maximum estimated cancer risk to a residential receptor from Alternative 4 construction would be 12.5 chances in a million. This value exceeds the significance threshold of 10 chances in a million. The estimated cancer risk conservatively assumed a 30-year residential exposure starting in the third trimester before birth and continuing to age 30.

The maximum estimated cancer risk to an off-site worker from Alternative 4 construction would be 8.8 chances in a million. This value is less than the significance threshold of 10 chances in a million. The estimated cancer risk at that location conservatively assumed a 25-year adult worker exposure, where the worker's schedule would match the OTC construction schedule.

The maximum estimated cancer risk to a sensitive receptor from Alternative 4 construction would be 12.7 chances in a million. This value exceeds the significance threshold of 10 chances in a million. The maximum sensitive receptor location is at the Veteran's Village of San Diego, located at 4141 Pacific Highway. The estimated cancer risk at that location conservatively assumed a 2¼-year residential exposure starting in the third trimester before birth and continuing to age 2. The modeled receptor was conservatively positioned near the edge of the Veteran's Village property closest to OTC.

The maximum estimated chronic noncancer hazard indices from Alternative 4 construction would be 0.004, 0.03, and 0.03 at a residential, worker, and sensitive receptor, respectively. These hazard indices are well below the significance threshold of 1.0. Therefore, this HRA predicted that no adverse noncancer health effects associated with long-term exposure to Alternative 4 construction emissions would occur.

Table 2.1-12 presents the estimated population cancer burden associated with Alternative 4 construction. The value of 0.013 additional cancer cases within the zone of impact is well below the significance threshold of 1.0.

Table 2.1-12 Population Cancer Burden from Construction of Alternative 4

Cancer Burden (additional cancer cases)	*Significance Threshold*	*Exceeds Threshold?*
0.013	1.0	No

Although management practices proposed for Alternative 4 would minimize construction DPM emissions and their associated health risks (see EIS Section 3.1.5.9), the analysis concluded that the resulting cancer risks from Alternative 4 construction emissions would be significant for the maximally exposed residential and sensitive receptors.

Potential Exposure to Operational TAC Emissions

Operation of the Navy facilities under Alternative 4 would include two diesel standby generators and three forklifts to support warehouse operations. The EIS Appendix D Table D3.1-96 shows that the standby generators would produce approximately 0.0001 ton of DPM emissions per year. The EIS Appendix D Table D3.1-98 shows that the forklifts (one of which would be diesel) would produce approximately 0.0003 ton of DPM emissions per year. Over a 30-year residential exposure period, these emissions would amount to approximately 0.012 tons, or 24 pounds of DPM. This is less than 1 percent of the DPM emissions modeled in the construction HRA for Alternative 4. Therefore, operation of the Navy facilities under Alternative 4 would not expose sensitive receptors to substantial levels of TACs.

Alternative 4 would also include the development of residential and commercial land uses. Residential land uses do not typically generate substantial TAC emissions. Commercial land uses could potentially include stationary sources of TACs such as dry-cleaning establishments or emergency standby generators. Because the description of Alternative 4 does not identify specific commercial facilities that would be sources of TACs, the analysis did not evaluate TAC emissions from this land use type. However, stationary sources of emissions associated with this alternative would be subject to SDAPCD Rules and Regulations that limit TAC emissions and establish operating permit requirements. In addition, management practices proposed for Alternative 4 would minimize TAC emissions during operations (see EIS Section 3.1.5.9). Therefore, TAC emissions associated with the operation of Alternative 4 would result in less than significant health impacts to sensitive receptors.

CO Hot Spots

EIS Section 3.1.5.7 evaluated the potential for vehicle trips generated from Alternative 4 to contribute to CO hot spots near local intersections. A CO hot spot would be considered significant if the CO concentration near a project-affected intersection would exceed the state's 1-hour ambient air quality standard of 20 parts per million or the state and federal 8-hour standard of 9.0 parts per million. The analysis used screening guidance, published by the SMAQMD, which finds that a project would not produce a significant local CO impact if it would not increase traffic volumes at affected intersections to more than 31,600 vehicles per hour (SMAQMD, 2016). Under Alternative 4, the project traffic study (see Appendix E from the EIS) estimated that the intersection of Rosecrans Street and Sports Arena Boulevard would have the greatest peak hour traffic volume of all signalized study intersections. With the inclusion of traffic generated from Alternative 4, the p.m. peak hour traffic volume would be 8,323 vehicles per hour. This volume is only 26 percent of the SMAQMD's screening threshold of 31,600 vehicles per hour. Therefore, operation of Alternative 4 would result in less than significant local CO impacts.

Impact of Nearby Sources on Future OTC Residents

This analysis also considered the potential for future OTC residents to be exposed to TAC emissions from the Interstate 5 freeway and adjacent businesses. CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* recommends that development projects (1) avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation; and (3) avoid siting new sensitive land uses within 300 feet of a large gas station (3.6 million gallons per year or greater) or within 50 feet of a typical gas station (CARB, 2005).

Because more than one-half of OTC Site 1 is within 500 feet of Interstate 5, strict adherence to the first CARB recommendation is not feasible for Alternative 4. However, CARB notes that its recommendations are advisory and should not be interpreted as defined buffer zones, and that projects must balance other considerations such as transportation needs, the benefits of urban infill, community economic development priorities, and other quality-of-life issues. Consistent with the goals of CARB's handbook, Alternative 4 would support infill, mixed-use, higher density, and transit-oriented development that would benefit regional air quality. Additionally, the operational design measures for Alternative 4 (see EIS Section 3.1.5.9) would minimize exposure of OTC residents to TACs. Therefore, existing emission sources near OTC would not expose future Alternative 4 residents to substantial pollutant concentrations.

Hazardous Materials Associated with Project Demolition

Special hazardous wastes, including asbestos-containing materials, lead-based paint, PCBs, and mercury-containing devices (e.g., old switches, thermostats), would be generated during demolition activities under Alternative 4. EIS Section 3.7.3 addresses the methods that would prevent these hazardous materials from becoming airborne during demolition. In addition, construction of Alternative 4 would implement a demolition plan, as proposed in EIS management practice AQ MGMT-2. With appropriate protocols in accordance with applicable regulations, handling and disposal of hazardous materials would not result in contaminant releases or exposures of humans to harmful substances. As a result, demolition activities from Alternative 4 would result in less than significant impacts from TACs.

Mitigation Measures and Residual Impacts

Alternative 4 would implement the following management practices that would help to minimize DPM emissions and associated cancer risk related to the use of off-road construction equipment (see EIS Section 3.1.5.9):

- AQ MGMT-3 would require all off-road diesel-powered construction equipment greater than 50 horsepower to meet the Tier 4 emission standards.
- AQ MGMT-4 would impose a 5-minute idling limit on diesel construction equipment.
- AQ MGMT-6 would require the contractor to properly maintain and tune construction equipment.
- AQ MGMT-7 would encourage the construction contractor to consider using alternative-fueled and electric-powered construction equipment where practical.

No additional mitigation to reduce construction DPM emissions is feasible. As a result, cancer risks from Alternative 4 construction emissions would be significant.

AQ-d: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of odor impacts depends on numerous factors including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be unpleasant, leading to distress and generating citizen complaints to local governments and regulatory agencies.

Construction

Less than Significant Impacts. Emissions from equipment and trucks in the form of diesel exhaust and VOCs from architectural coatings and paving activities would represent potential sources of odors from construction of Alternative 4. The offensiveness of odors from these types of sources are relatively minor in comparison to more offensive sources, such as decomposing biomass (hydrogen sulfide emissions) or chemical processing facilities. Additionally, odors from architectural coatings and paving activities would cease upon drying or hardening. Due to their temporary and intermittent nature, odor emissions transported off site would dilute to below levels of concern at any sensitive receptor site.

Implementation of the management practices identified under Impact Criterion AQ-c would minimize odors of diesel exhaust from construction of Alternative 4. Implementation of AQ MGMT-8, which would direct the construction contractor to select low-emitting construction materials, also would help to minimize odors from construction. As a result, odor emissions from construction of Alternative 4 would not affect a substantial number of people and therefore would be less than significant.

Operations

Less than Significant Impacts. Alternative 4 would develop residential, commercial, retail, office, hotel, transit, park, and open space land uses in proximity to one another. While the development specifics are currently unknown, planned land uses are not expected to generate substantial amounts of odors. A typical commercial land use proposed for development that would generate odors would be restaurants. Odors associated with proposed restaurants or other commercial uses would be similar to existing residential and food service uses throughout the Midway-Pacific Highway Community area and therefore would not generally be considered adverse. In addition, Alternative 4 includes management practices, such as AQ MGMT-12 (use of Tier 4 emission standards on operational equipment) and AQ MGMT-31 (use of alternative-fueled or electric-powered operational equipment), that would help to minimize odor generation. As a result, operation of Alternative 4 would not create objectionable odors affecting a substantial number of people.

This analysis also considered the potential for future OTC residents to be exposed to odors from adjacent businesses. Auto body shops and gas stations are two existing land uses in the immediate vicinity of OTC that could be sources of odors to future residents. These sources would be required to comply with SDAPCD Rule 51 (Nuisance), which prohibits the discharge of air contaminants or other materials that would be a nuisance or annoyance to the public. Potential odors would also be controlled and minimized through compliance with the city's "Air Contaminant Regulations" (San Diego Municipal Code Section 142.0710). In addition, management practice AQ MGMT-16 would direct the Navy to consider adjacent air pollution sources such as gas stations, dry cleaners, and auto body shops in the siting, design, and construction of residential development. Therefore, odor impacts from existing land uses to OTC residents proposed under Alternative 4 would be less than significant.

Mitigation Measures and Residual Impacts

Impacts would be less than significant. Therefore, mitigation is not required. However, implementation of MM AQ-2 under Impact Criterion AQ-b, which would limit the amount of VOC emissions from the use of architectural coatings during construction of Alternative 4, would also minimize odor emissions from this source.

GHG-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impacts. Table 2.1-13 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 4 by analysis year. The emissions in years 2035 and 2050 include the increases in transit center vehicle trips relative to 2020 existing conditions. The EIS Appendix D Table D3.1-54 presents GHG emissions by source category for Alternative 4. Vehicle exhaust from trips generated by the development land uses would be the largest contributor to the carbon dioxide equivalent (CO_2e) emissions. For each analysis year, Table 2.1-13 shows the annual incremental emissions of Alternative 4 (i.e., Alternative 4 minus 2020 existing conditions). The highest emission increment of 46,830 metric tons per year of CO_2e would occur in the buildout year of 2050 then would slightly lower in future years as existing and future state GHG regulations reduce emissions from proposed sources. A comparison to EIS Tables 3.1-4 and 3.1-5 shows that this incremental increase would represent approximately 0.01 percent and 0.36 percent of the existing California and City of San Diego CO_2e emissions, respectively.

Table 2.1-13 Annual Construction and Operational GHG Emissions, Alternative 4

Source Category	***CO_2e* (MT/yr)**
Year 2026	
Construction[1]	5,138
Operation	8,338
Total	13,476
CEQA Baseline[2]	12,482
Alternative 4 Increment[3]	**993**
Year 2030	
Construction	5,138
Operation	22,265
Total	27,403
CEQA Baseline	12,482
Alternative 4 Increment	**14,921**
Year 2035	
Construction	5,138
Operation	32,075
Total	37,213
CEQA Baseline	12,482
Alternative 4 Increment	**24,731**
Year 2050	
Construction	5,138
Operation	54,174
Total	59,312
CEQA Baseline	12,482
Alternative 4 Increment	**46,830**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; CEQA = California Environmental Quality Act.

Notes: (1) Construction emissions are amortized over 30 years.
(2) The CEQA baseline is OTC existing conditions (2020).
(3) Increment = Alternative minus CEQA Baseline.

As discussed above in Section 2.1.1.1 (Significance Criteria), neither the SDAPCD nor the City of San Diego have adopted mass emission thresholds for GHG emissions under CEQA. Therefore, this analysis evaluates the significance of GHG impacts by determining consistency of Alternative 4 with the City of San Diego CAP, as presented in the following evaluation of Impact Criterion GHG-b.

GHG-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impacts.

2017 Climate Change Scoping Plan (2017 Scoping Plan)

The 2017 Scoping Plan requires CARB and other state agencies to adopt regulations and incentives to reduce GHG emissions to the levels specified in Executive Order S-3-05 and Executive Order B-30-15. As such, the 2017 Scoping Plan is not directly applicable to individual projects, although there are several regulatory measures aimed at the identification and reduction of GHG emissions. Most of these regulatory measures focus on area source emissions (e.g., energy usage, high-global warming-potential GHGs in consumer products), and vehicle emissions (e.g., more fuel-efficient vehicles, reduced VMT, fuel economy).

In terms of minimizing area source emissions, Alternative 4 would be consistent with the 2017 Scoping Plan through incorporation of the following management practices:

AQ MGMT-8	Low-emitting building materials
AQ MGMT-9	Cool and/or green roofs
AQ MGMT-10	Leadership in Energy and Environmental Design (LEED) Silver certification
AQ MGMT-11	Solar energy
AQ MGMT-13	Refrigerant management plan
AQ MGMT-14	Sustainable landscapes
AQ MGMT-17	Low flow plumbing fixtures and appliances
AQ MGMT-18	No wood or gas fireplaces
AQ MGMT-19	Recycled or sustainable building materials
AQ MGMT-20	Natural and passive cooling
AQ MGMT-21	Innovative site design and building orientation

In terms of minimizing vehicle emissions, Alternative 4 would be consistent with the 2017 Scoping Plan by developing high-density, transit-supportive residential and nonresidential land uses served by an on-site transit center. Alternative 4 would also incorporate the following management practices to further minimize vehicle emissions:

AQ MGMT-22	Electric vehicle charging stations
AQ MGMT-23	Bicycle parking spaces
AQ MGMT-24	Bicycle network
AQ MGMT-25	Designated parking for low-emitting, fuel-efficient, and carpool-vanpool vehicles
AQ MGMT-26	Encourage discounted transit passes for residents
AQ MGMT-27	Pedestrian network
AQ MGMT-28	Navy inter-facility employee shuttle

The above management practices are fully described in the EIS Section 3.1.5.9. In addition, Section 3.2.3.9, *Transportation*, of the EIS recommends the implementation of a TDM program to reduce vehicular traffic and associated emissions.

To evaluate the gain in efficiency of vehicle use associated with Alternative 4, the project transportation study prepared an SB 743 analysis (see the EIS Appendix E, Section 26.2). The analysis estimated that Alternative 4 at 2050 buildout would generate vehicle trips that average 4.5 VMT per day per resident. This value is 69 percent lower than the 2050 regional average of 14.4 VMT per day per resident predicted by the SANDAG Regional Travel Model. The analysis also estimated that Alternative 4 at 2050 buildout would generate vehicle trips that average 11.1 VMT per day per employee. This value is 48 percent lower than the 2050 regional average of 21.2 VMT per day per employee predicted by the SANDAG Regional Travel Model. Therefore, the reduction in VMT per service population for Alternative 4 is consistent with the 2017 Scoping Plan.

In summary, Alternative 4 would develop high-density, transit-supportive residential and nonresidential land uses served by an on-site transit center and would further enhance other multimodal options by designing the site to encourage pedestrian and bicycle connectivity. The Alternative would allow the City of San Diego to accommodate existing and projected population and employment growth within a developed, urbanized area, thereby avoiding the conversion of undeveloped land to developed uses, which also is consistent with CARB's objectives in the 2017 Scoping Plan. Therefore, Alternative 4 would not conflict with the 2017 Scoping Plan or the statewide emissions reduction targets for 2030 and 2050.

San Diego Forward: The Regional Plan

SANDAG's Regional Plan (the current RTP/Sustainable Communities Strategy for the region) contains five basic strategies to move the region toward sustainability. Of those, the two strategies focus on achieving GHG emission reductions:

- Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit; and
- Invest in a transportation network that gives people transportation choices and reduces GHG emissions.

Alternative 4 is consistent with the Regional Plan's GHG emission reduction strategies because it would co-locate housing, employment, and a transit center in an urbanized area. Transit choices would include Amtrak, the North County Transit District COASTER, San Diego Metropolitan Transit System trolley, and numerous Metropolitan Transit System bus lines. Alternative 4 would provide further enhancements to the transit system by developing and improving bicycle and pedestrian networks and related amenities within the project site and connecting the networks to those in adjacent communities. In addition, Section 3.2.3.9 of the EIS, *Transportation*, recommends the implementation of a TDM program to reduce vehicular traffic and associated emissions. Therefore, Alternative 4 would not conflict with the GHG reduction strategies of SANDAG's San Diego Forward Regional Plan.

City of San Diego CAP

To evaluate the potential for Alternative 4 to conflict with the CAP, this analysis followed the CAP Consistency Checklist, the purpose of which is to "provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review" under CEQA (City of San Diego, 2017). The CAP Checklist "contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. … Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions." The CAP Consistency Checklist includes evaluation of the following three steps.

Step 1 (Land Use Consistency) of the CAP Checklist evaluates a project's consistency with the growth projections used in the development of the CAP. To not conflict with the CAP, a project would need to satisfy one of three possible land use options. Alternative 4 satisfies Option B, which describes a project that is not consistent with the existing land use plan and zoning designations but would increase density within a Transit Priority Area (TPA) and would implement the CAP Strategy 3 actions in Step 3 (see below). The city defines a TPA as an area within 0.5 mile of a major transit stop that is existing or planned (City of San Diego, 2019a). Because Alternative 4 would include a transit center, all project development would be within a TPA.

Step 2 (CAP Strategies Consistency) of the CAP Checklist includes seven items that check for consistency with CAP GHG emission reduction Strategy 1 (energy and water efficient buildings) and Strategy 3 (bicycling, walking, transit, and land use). The seven items cover (1) cool/green roofs, (2) plumbing fixtures and fittings, (3) electric vehicle charging, (4) bicycle parking spaces, (5) shower facilities, (6) designated parking spaces, and (7) TDM. While site-specific planning details are unknown at this time, Alternative 4 would satisfy these seven items by implementing management practices during project design and operation, as described in EIS Section 3.1.5.9, and TRANS MGMT-1, as described in EIS Section 3.2. Specifically, AQ MGMT-9 would satisfy Item 1 by providing cool and/or green roofs. AQ MGMT-17 would satisfy Item 2 by installing low flow plumbing fixtures and appliances in nonresidential and residential buildings. AQ MGMT-22 would satisfy Item 3 by providing electric vehicle charging stations for both residential and nonresidential uses in quantities specified by the CAP. AQ MGMT-23 would satisfy Item 4 by providing more short- and long-term bicycle parking spaces than required in the city's Municipal Code for each nonresidential use. AQ MGMT-29 would satisfy Item 5 by installing shower and changing facilities in nonresidential buildings consistent with voluntary measures under the California Green Building Code. AQ MGMT-25 would satisfy Item 6 by providing designated parking for low-emitting, fuel-efficient, and carpool-vanpool vehicles for nonresidential uses. Section 3.2.3.9 of the EIS, *Transportation*, recommends the implementation of a TDM program to reduce vehicular traffic and associated emissions, which would satisfy Item 7.

As determined in Step 1 above, Alternative 4 would not be consistent with the existing land use plan and zoning designations, but it would result in an increased density within the surrounding TPA. Therefore, Step 3 of the CAP Checklist establishes whether such a project would be consistent with the assumptions in the CAP by determining if it would implement the CAP Strategy 3 actions included in Step 3. The six Step 3 questions and their responses are as follows:

> *1. Would the proposed project implement the General Plan's City of Villages strategy in an identified TPA that will result in an increase in the capacity for transit-supportive residential and/or employment densities?*
>
> Yes. The city defines a "village" as the mixed-use heart of a community where residential, commercial, employment, and civic uses are all present and integrated. The City of Villages strategy focuses growth into mixed-use activity centers that are pedestrian-friendly districts linked to an improved regional transit system. The strategy is designed to sustain the long-term economic, environmental, and social health of the city and its many communities (City of San Diego, 2008a).
>
> OTC Site 1 is the primary land area within the Kurtz District, which the Community Plan has designated as an employment area with military, office, research and development, and complementary residential uses to support and complement the NAVWAR functions. OTC Site 2

is within the Dutch Flats Urban Village, which is planned as an employment and residential-focused urban village (City of San Diego, 2018). See EIS Section 3.4, *Land Use*, for a more detailed discussion of the features of these two planning areas. Under existing conditions, all but the easternmost portions of the Kurtz District and Dutch Flats Village are within a TPA (the exception being the area roughly east of Enterprise Street, including the southeast portion of OTC Site 1). By consolidating the Old Town Transit Center to OTC Site 1, Alternative 4 would extend the TPA to cover the currently excluded portions of the Kurtz District and Dutch Flats Village.

Alternative 4 would provide a transit-oriented mixed-use, high-density development within the Kurtz District and Dutch Flats Urban Village. The development would include transit-supportive residential, hotel, and employment uses close to the consolidated transit center on OTC. Specifically, Alternative 4 would construct 10,000 new residential units, 450 new hotel rooms, 1.6 million square feet of new private office and retail space, and 1.1 million square feet of government office, laboratory, and warehouse space within 0.5 mile of the consolidated transit center. The traffic study estimated that the mixed-use benefit of Alternative 4 would result in 6,663 avoided daily trips.

2. Would the proposed project implement the General Plan's Mobility Element in TPAs to increase the use of transit?

Yes. The General Plan's Mobility Element promotes the City of Villages strategy by calling for villages, employment centers, and other higher intensity uses to be located in areas that can be served by high-quality transit services. Alternative 4 would feature a transit center that provides access to Amtrak, the COASTER, the trolley, and numerous Metropolitan Transit System bus lines. All development would be within 0.5 miles of the consolidated transit center on OTC. Management practice AQ MGMT-30 would design transit stops to provide convenient access to future residents and workers. AQ MGMT-26 would encourage new multi-family residential uses to provide discounted transit passes to residents. Section 3.2.3.9 of the EIS, *Transportation*, recommends the implementation of a TDM program that would increase the use of transit. Furthermore, the project transportation study recommended an evaluation of the feasibility of providing transit signal priority along four roadway segments near OTC. The transportation study also recommended preparation of a transit mobility plan for the Proposed Action Alternatives to maximize the efficiency and attractiveness of transit for future employees and residents.

3. Would the proposed project implement pedestrian improvements in TPAs to increase walking opportunities?

Yes. Alternative 4 would implement management practice AQ MGMT-27, which would design the project to include a complete, functional, and interconnected pedestrian network. Because project-level planning details are unknown at this time, the specific pedestrian amenities have not been finalized. However, the project transportation study recommended 14 improvements within 0.5-mile walking distance from the OTC to enhance pedestrian accessibility to adjacent communities. The transportation study also recommended preparation of a pedestrian master plan for the Proposed Action Alternatives to guide design and implementation of policies and programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities (see the EIS Appendix E, Section 19.4).

4. Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?

Yes. The goals of the *City of San Diego Bicycle Master Plan* are to (1) make bicycling a viable travel choice, particularly for trips of less than 5 miles; (2) provide a safe and comprehensive local and regional bikeway network; and (3) produce environmental quality, public health, recreation, and mobility benefits through increased bicycling (City of San Diego, 2013). Alternative 4 would implement management practice AQ MGMT-24, which would design the project to include dedicated bicycle lanes that connect to other communities and to the regional bicycle network. Because project-level planning details are unknown at this time, the specific bicycle amenities have not been finalized. However, the transportation study recommended 12 improvements within 0.5-mile bicycling distance from the OTC to enhance off-site bicycle network connectivity and improve safety. The transportation study also recommended preparation of a bicycle master plan for the Proposed Action Alternatives to guide design and implementation of policies and programs to enhance access and mobility around and within the site for bicyclists of all ages and abilities (see the EIS Appendix E, Section 20.0, *Bicycle Mobility*).

5. Would the proposed project incorporate implementation mechanisms that support transit-oriented development?

Yes. Alternative 4 would construct 10,000 new residential units, 450 new hotel rooms, 1.6 million square feet of new private office and retail space, 1.1 million square feet of government office, laboratory, and warehouse space, and 18 acres of parkland, all within a TPA that is served by the San Diego Trolley, Amtrak, COASTER, and numerous bus lines. As described above in the responses to Questions 1 through 4, Alternative 4 would include transit, pedestrian, and bicycle improvements to encourage alternative modes of transportation. Section 3.2.3.9 of the EIS, *Transportation*, recommends the implementation of a TDM program that would increase the use of transit.

6. Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?

Yes. One of the primary goals of the city's *Urban Forestry Program* is to increase the city's urban tree canopy cover and maximize the benefits of trees. The CAP set targets of 15 percent urban tree canopy coverage by 2020 and 35 percent by 2035. Alternative 4 would support the city's goals by planting trees throughout its development. Major streets and pathways within the project site would include trees and other natural amenities to provide shade and create a more inviting pedestrian environment. At this time, it is unknown if Alternative 4 would satisfy the specific CAP targets for tree canopy coverage. However, management practice AQ MGMT-14 would incorporate sustainable landscapes into the project design, including tree planting, use of drought-tolerant native vegetation, and use of high efficiency irrigation technology.

In summary, Steps 1 and 3 of the CAP Checklist determined that Alternative 4 would result in increased density within a TPA and implement CAP Strategy 3 actions. Step 2 of the CAP Checklist determined that Alternative 4 would be consistent with all applicable strategies and actions of the CAP. Therefore, Alternative 4 would not conflict with the CAP, and the project's incremental contribution to cumulative GHG emissions would be less than cumulatively considerable.

City of San Diego General Plan

The General Plan land use element establishes a City of Villages strategy to focus growth into mixed-use activity centers that are pedestrian-friendly, centers of community, and linked to the regional transit system. Implementation of this strategy can decrease VMT and reduce GHG emissions. As discussed above in the City of San Diego CAP section, Alternative 4 would support the type of mixed-use development envisioned by the City of Villages strategy. Alternative 4 would also incorporate numerous management practices to conform the project with specific applicable policies of the General Plan (see EIS Section 3.1.5.9). As a result, Alternative 4 would be consistent with the following key GHG-related policies of the General Plan:

Sustainable development: CE-A.5, CE-A.6, CE-A.9, CE-A.10, CE-A.11, CE-A.12, CE-F.4.
Sustainable energy: CE-I.4, CE-I.5.
Walkable communities: ME-A.6, ME-A.7, ME-A.8.
Transit: ME-B.3, ME-I.3, ME-I.4.
Street system: ME-C.3.
TDM program: CE-F.6, ME-E.1, ME-E.2, ME-E.3, ME-E.4, ME-E.6.
Bicycling: ME-F.2, ME-F.4.
Parking management: ME-G.5.

In summary, Alternative 4 would support General Plan concepts such as increased walkability, enhanced pedestrian and bicycle networks, improved connections to transit, and sustainable development and green building practices. Alternative 4 would also promote environmentally conscious building practices and materials, increased energy and water efficiency, increased on-site energy generation, and reductions in waste generation. All these project attributes correspond with policies set out by the General Plan. Therefore, Alternative 4 would not conflict with the GHG reduction strategies of the City's General Plan.

Midway-Pacific Highway Community Plan

The Midway-Pacific Highway Community Plan was designed to reflect and implement the CAP and the GHG reduction recommendations of the General Plan. Its policies refine the City's General Plan policies with site-specific recommendations applicable to the Midway-Pacific Highway Community. Alternative 4 would incorporate numerous management practices that would enable it to conform to specific applicable policies of the Community Plan (see EIS Section 3.1.5.9). As a result, Alternative 4 would be consistent with the following key GHG-related policies of the Community Plan:

Fireplace prohibition in Dutch Flats: SDR-15
Walkability: ME-2.1.
Bicycling: ME-3.1, ME-3.2.
Transit: ME-4.1, ME-4.3, ME-4.7.
Electric vehicle infrastructure: ME-6.3.
TDM program: ME-7.1, ME-7.2, ME-7.4, ME-7.5, ME-7.6, ME-7.8, ME-7.10.
Landscaping: UD-3.3, UD-3.5, UD-3.13
Sustainable development: UD-6.6, UD-8.2, UD-8.3, UD-8.4, UD-8.5, UD-8.6, UD-8.8, UD-8.9, UD-8.10, UD-8.11
Conservation: CE-1.1, CE-1.2, CE-1.4, CE-1.5, CE-1.6, CE-1.7, CE-1.8, CE-1.9

As previously shown in Table 2.1-3, Alternative 4 by itself would consume most the residential growth forecasted in the Community Plan, and it would exceed the employment growth forecasted in the Community Plan by a wide margin. Therefore, Alternative 4 is not consistent with the growth assumptions in the Community Plan. However, Alternative 4 would support the type of mixed-use development envisioned by the City of Villages strategy. The City of Villages strategy is designed to focus redevelopment, infill, and new growth into pedestrian-friendly, mixed-use activity centers linked to the regional transit system. Further, increasing residential density and nonresidential intensity along the transit corridors within TPAs would support the city in achieving its GHG emissions reduction targets under the CAP. As explained in the city's Final Program EIR for the Mission Valley Community Plan Update, "Concentrating new growth in an area can result in greater GHG emissions than allowing the less intensive land uses to remain since growth is being directed toward areas that would produce less GHG emissions per capita citywide. Thus, consistency with the City of Villages strategy can result in one Community Plan area having an increase in GHG emissions, with the result still being an overall decrease in citywide GHG emissions." (City of San Diego, 2019b).

In summary, Alternative 4 would be consistent with the City of Villages strategy and the GHG-related policies of the Community Plan. Therefore, Alternative 4 would not conflict with the GHG reduction strategies of the Community Plan.

Summary

Although Alternative 4 would increase GHG emissions relative to existing conditions at OTC, accommodating California's growing population base at this location and with the design attributes of the alternative is more efficient than other scenarios, such as development in a non-urbanized area without transit. As explained in the City's General Plan (City of San Diego, 2008a):

> The City of Villages strategy to direct compact growth in limited areas that are served by transit is, in itself, a conservation strategy. Compact, transit-served growth is an efficient use of urban land that reduces the need to develop outlying areas and creates an urban form where walking, bicycling, and transit are more attractive alternatives to automobile travel. Reducing dependence on automobiles reduces VMT which, in turn, lowers greenhouse gas emissions.

Further, as discussed above, Alternative 4 would not conflict with the GHG reduction strategies of CARB's Climate Change Scoping Plan, SANDAG's Regional Plan, the city's CAP, the City's General Plan, or the city's Midway-Pacific Highway Community Plan. Various factors support these determinations, such as mixed-use development proposed in an urban location served by transit, and incorporation of management practices that are consistent with these plans and go beyond existing regulatory compliance standards for the built environment. Therefore, Alternative 4 would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of GHGs. As a result, GHG emissions associated with construction and operation of Alternative 4 also would be less than significant in regard to Impact Criterion GHG-a.

Mitigation Measures and Residual Impacts

Impacts would be less than significant. Mitigation is not required.

2.1.1.4 Alternative 5 Impacts

AQ-a: Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impacts.

Consistency with the RAQS

At the individual level, Alternative 5 would be within the residential growth projections, but above the employment and commercial growth projections for the Midway-Pacific Highway Community. At the cumulative level, Alternative 5, in conjunction with other proposed residential and mixed-use projects, would most likely exceed the residential growth projections for the Midway-Pacific Highway Community. Therefore, Alternative 5—both individually and in combination with other projects considered in the cumulative setting—would generate vehicular emissions that exceed the levels estimated in the RAQS. As a result, Alternative 5 would conflict with implementation of the RAQS and could have a potentially significant impact on regional air quality.

Consistency with the State Implementation Plan

With respect to the NAAQS, EIS Section 3.1.5.8 demonstrated that VOC and NO_x emissions associated with construction and operation of Alternative 5 would be less than the applicable General Conformity *de minimis* thresholds. Therefore, Alternative 5 would not conflict with or obstruct implementation of the SIP.

Mitigation Measures and Residual Impacts

MM AQ-1 would reduce significant impacts of Alternative 5 by requiring the Navy to provide the information needed to update the RAQS. However, as updates to the air quality plans are within the SDAPCD's jurisdiction, the effectiveness of this mitigation measure cannot be guaranteed at this time. The impact would remain significant and unavoidable.

AQ-b: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Less than Significant Impacts with Mitigation. Table 2.1-14 presents estimates of annual criteria pollutant emissions that would occur from construction of Alternative 5. The analysis quantified the effects of the same construction management practices as those evaluated for Alternative 4. The table shows that the maximum annual construction emissions would be below the SDAPCD annual screening thresholds for all pollutants.

Table 2.1-15 presents estimates of maximum daily criteria pollutant emissions that would occur from construction of Alternative 5. These data show that the maximum daily construction emission of VOC would be above the SDAPCD daily screening threshold. The maximum daily construction emissions of all other criteria pollutants would be below the SDAPCD daily screening thresholds. Therefore, without mitigation, construction of Alternative 5 would result in a cumulatively considerable net increase of VOC emissions.

Table 2.1-14 Annual Construction Emissions, Alternative 5 (tons/year)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	1.1	3.7	14.9	0.04	2.3	0.7
2022	1.3	2.7	16.1	0.04	2.4	0.7
2023	1.2	2.5	15.6	0.04	2.4	0.7
2024	1.2	2.5	15.3	0.04	2.5	0.7
2025	4.1	2.0	12.9	0.03	2.1	0.6
2026	0.9	5.7	15.5	0.05	2.9	0.8
2027	1.6	6.7	24.3	0.06	3.6	1.0
2028	3.1	6.5	23.3	0.06	3.6	1.0
2029	2.9	5.5	20.1	0.05	3.1	0.9
2030	2.9	6.7	23.1	0.07	3.4	1.0
2031	2.9	6.2	22.4	0.06	3.6	1.0
2032	2.9	6.1	22.2	0.06	3.6	1.0
2033	2.8	6.0	21.9	0.06	3.6	1.0
2034	2.7	5.3	19.4	0.05	3.2	0.9
2035	2.3	6.7	19.0	0.06	1.6	0.5
2036	2.4	6.1	20.5	0.05	1.6	0.5
2037	2.3	5.7	18.7	0.05	1.5	0.4
2038	2.3	5.7	18.7	0.05	1.5	0.4
2039	2.3	5.7	18.6	0.05	1.5	0.4
2040	2.3	5.6	18.5	0.05	1.5	0.4
2041	2.3	5.6	18.5	0.05	1.5	0.4
2042	2.3	5.6	18.5	0.05	1.5	0.4
2043	2.3	5.6	18.5	0.05	1.5	0.4
2044	2.3	5.6	18.5	0.05	1.5	0.4
2045	2.2	5.6	18.3	0.05	1.5	0.4
2046	2.2	5.6	18.4	0.05	1.5	0.4
2047	2.2	5.6	18.4	0.05	1.5	0.4
2048	2.2	5.6	18.5	0.05	1.5	0.4
2049	2.1	3.9	13.3	0.03	1.1	0.3
Maximum Annual Emissions	**4.1**	**6.7**	**24.3**	**0.07**	**3.6**	**1.0**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Table 2.1-15 Maximum Daily Construction Emissions, Alternative 5 (pounds per day)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	15.1	122.8	197.2	0.7	29.7	9.4
2022	10.7	21.1	127.1	0.3	19.3	5.5
2023	10.2	19.4	123.0	0.3	19.2	5.5
2024	9.7	18.8	119.5	0.3	19.2	5.4
2025	328.7	19.5	133.9	0.3	22.9	6.4
2026	17.7	126.7	288.3	1.0	41.1	12.4
2027	13.8	53.3	200.8	0.5	28.5	8.2
2028	939.5	51.5	204.8	0.5	33.2	9.4
2029	939.0	50.9	202.1	0.5	33.2	9.4
2030	940.5	118.9	277.9	1.0	41.0	12.2
2031	942.3	48.7	196.0	0.5	33.0	9.2
2032	944.2	48.3	193.6	0.5	33.0	9.2
2033	946.2	47.9	191.4	0.5	33.0	9.2
2034	948.2	47.5	189.3	0.5	33.0	9.2
2035	944.6	110.8	245.3	0.8	24.9	7.8
2036	944.9	46.4	163.6	0.4	16.6	4.8
2037	945.2	45.0	163.3	0.4	16.3	4.7
2038	945.6	44.9	162.9	0.4	16.1	4.6
2039	945.9	44.9	162.5	0.4	15.9	4.6
2040	945.8	44.2	160.4	0.4	15.7	4.5
2041	946.1	44.2	160.0	0.4	15.5	4.4
2042	946.4	44.1	159.7	0.4	15.3	4.4
2043	946.7	44.1	159.3	0.4	15.0	4.3
2044	947.1	44.1	159.0	0.4	14.8	4.3
2045	947.2	43.8	157.8	0.4	14.6	4.2
2046	947.5	43.8	157.5	0.4	14.4	4.2
2047	947.8	43.8	157.1	0.4	14.2	4.1
2048	948.2	43.7	156.8	0.4	14.0	4.0
2049	948.5	43.9	158.8	0.4	13.8	4.0
Maximum Daily Emissions	**948.5**	**126.7**	**288.3**	**1.0**	**41.1**	**12.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Tables 2.1-16 and 2.1-17 present estimates of annual and maximum daily criteria pollutant emissions, respectively, that would occur from operation of Alternative 5 for each analysis year and the peak emissions year. Emissions in years prior to 2050 include concurrent construction emissions. Table 2.1-16 shows that the annual VOC increment would be above the threshold in 2035, the peak year of 2049, and in 2050. Also, the annual PM_{10} increment would be above the threshold in the peak year of 2048 and 2050. Table 2.1-17 shows that the daily VOC increment would be above the threshold in 2030, 2035, the peak year of 2049, and in 2050. In addition, the daily PM_{10} increment would be above the threshold in the peak year of 2049 and in 2050. In summary, operation of Alternative 5 without mitigation would result in cumulatively considerable net increases of annual and daily VOC and PM_{10} emissions.

Mitigation Measures and Residual Impacts

Table 2.1-18 presents estimates of maximum daily criteria pollutant emissions that would occur from construction of Alternative 5 with implementation of MM AQ-2. These data show that the maximum daily construction emission of VOC would be reduced to below the SDAPCD daily screening threshold. The maximum daily construction emissions of all other criteria pollutants would remain below the SDAPCD daily screening thresholds. Therefore, construction of Alternative 5 with mitigation would result in less than significant criteria pollutant emission impacts.

Table 2.1-19 presents estimates of maximum daily criteria pollutant emissions that would occur from operation of Alternative 5 with application of MM AQ-2 to the concurrent construction emissions.

These data show that the daily VOC increment would be reduced but would remain above the SDAPCD daily screening threshold in 2030, 2035, the peak year of 2049, and in 2050 and subsequent years. The daily PM_{10} increment would also remain above the threshold in the peak year of 2049 and in 2050 and subsequent years. The daily CO, NO_x, SO_x, and $PM_{2.5}$ increments would remain below the thresholds. Therefore, with implementation of MM AQ-2, operation of Alternative 5 would result in cumulatively considerable net increases of daily VOC and PM_{10} emissions.

Health Effects Related to Criteria Pollutant Emissions

Because Alternative 5 would produce significant emissions of VOC and PM_{10} in a region that is nonattainment for ozone and PM_{10}, this analysis concludes that Alternative 5 would contribute to adverse health effects associated with exposure to ozone and PM_{10} in the region. The contribution of Alternative 5 to adverse health effects would be less than those of Alternative 4 and therefore slight, relative to the region’s overall ozone- and PM_{10}-related health effects.

Table 2.1-16 Annual Operational Emissions, Alternative 5 (tons per year)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	0.9	5.7	15.5	0.0	2.9	0.8
Operation	4.4	4.1	9.5	0.0	3.3	1.0
Total Alternative 5	**5.3**	**9.7**	**25.0**	**0.1**	**6.2**	**1.8**
CEQA Baseline[1]	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 5 Increment[2]	**-0.9**	**-0.4**	**2.7**	**0.0**	**0.6**	**0.1**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	2.9	6.7	23.1	0.1	3.4	1.0
Operation	14.4	13.8	29.1	0.1	10.8	3.1
Total Alternative 5	**17.3**	**20.5**	**52.2**	**0.2**	**14.3**	**4.0**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 5 Increment	**11.1**	**10.4**	**30.0**	**0.1**	**8.6**	**2.4**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	2.3	6.7	19.0	0.1	1.6	0.5
Operation	21.8	20.8	39.3	0.2	15.9	4.5
Total Alternative 5	**24.1**	**27.5**	**58.2**	**0.2**	**17.4**	**5.0**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 5 Increment	**17.8**	**17.4**	**36.0**	**0.1**	**11.8**	**3.3**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2050[3]						
Operation	41.3	41.0	58.0	0.2	22.8	6.5
Total Alternative 5	**41.3**	**41.0**	**58.0**	**0.2**	**22.8**	**6.5**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 5 Increment	**35.0**	**30.8**	**35.8**	**0.2**	**17.1**	**4.8**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Maximum Year[4]						
Construction	2.1	5.6	18.5	0.0	1.1	0.3
Operation	40.0	38.3	55.5	0.2	22.3	6.3
Total Alternative 5	**42.1**	**43.9**	**74.0**	**0.3**	**23.4**	**6.7**
CEQA Baseline	6.3	10.1	22.2	0.1	5.6	1.7
Alternative 5 Increment	**35.8**	**33.8**	**51.7**	**0.2**	**17.8**	**5.0**
SDAPCD Threshold	15	40	100	40	15	10
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: [1] The CEQA baseline is OTC existing conditions (2020).
[2] Increment = Alternative minus CEQA Baseline. The Alternative 5 VOC and NO_x increments in 2026 are slightly negative, as the Alternative would have lower emissions in 2026 than 2020 existing conditions.
[3] Assumes there would be no construction in 2050.
[4] Maximum emissions would occur in year 2049 for VOC and 2048 for all other pollutants.

Table 2.1-17 Maximum Daily Operational Emissions, Alternative 5 (pounds per day)

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	17.7	126.7	288.3	1.0	41.1	12.4
Operation	26.6	29.8	83.9	0.3	25.5	7.3
Total Alternative 5	44.4	156.5	372.2	1.3	66.6	19.7
CEQA Baseline(1)	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment(2)	**2.5**	**73.6**	**192.0**	**0.7**	**22.7**	**6.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	940.5	118.9	277.9	1.0	41.0	12.2
Operation	84.6	87.9	210.9	0.8	73.2	20.6
Total Alternative 5	1,025.1	206.8	488.9	1.7	114.2	32.8
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**983.3**	**123.9**	**308.6**	**1.2**	**70.3**	**19.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	944.6	110.8	245.3	0.8	24.9	7.8
Operation	126.5	130.0	277.6	1.1	104.8	29.3
Total Alternative 5	1,071.1	240.8	522.9	1.9	129.6	37.1
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**1,029.3**	**157.9**	**342.7**	**1.3**	**85.7**	**23.8**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2050(3)						
Operation	237.7	252.0	407.5	1.6	147.9	41.7
Total Alternative 5	237.7	252.0	407.5	1.6	147.9	41.7
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**195.9**	**169.1**	**227.2**	**1.0**	**104.0**	**28.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Maximum Year(4)						
Construction	948.5	43.9	158.8	0.4	13.8	4.0
Operation	230.3	243.9	398.8	1.5	145.0	40.9
Total Alternative 5	1,178.8	287.8	557.6	1.9	158.8	44.9
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**1,137.0**	**204.9**	**377.4**	**1.4**	**114.9**	**31.5**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: (1) The CEQA baseline is OTC existing conditions (2020).
(2) Increment = Alternative minus CEQA Baseline.
(3) Assumes there would be no construction in 2050.
(4) Maximum emissions would occur in year 2049 for all pollutants.

Table 2.1-18 Maximum Daily Construction Emissions, Alternative 5 with Mitigation (pounds per day)

Year	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
2021	15.1	122.8	197.2	0.7	29.7	9.4
2022	10.7	21.1	127.1	0.3	19.3	5.5
2023	10.2	19.4	123.0	0.3	19.2	5.5
2024	9.7	18.8	119.5	0.3	19.2	5.4
2025	129.9	19.5	133.9	0.3	22.9	6.4
2026	17.7	126.7	288.3	1.0	41.1	12.4
2027	13.8	53.3	200.8	0.5	28.5	8.2
2028	133.7	51.5	204.8	0.5	33.2	9.4
2029	133.2	50.9	202.1	0.5	33.2	9.4
2030	132.2	118.9	277.9	1.0	41.0	12.2
2031	131.6	48.7	196.0	0.5	33.0	9.2
2032	131.0	48.3	193.6	0.5	33.0	9.2
2033	130.5	47.9	191.4	0.5	33.0	9.2
2034	130.0	47.5	189.3	0.5	33.0	9.2
2035	126.0	110.8	245.3	0.8	24.9	7.8
2036	126.0	46.4	163.6	0.4	16.6	4.8
2037	125.9	45.0	163.3	0.4	16.3	4.7
2038	125.9	44.9	162.9	0.4	16.1	4.6
2039	125.8	44.9	162.5	0.4	15.9	4.6
2040	125.3	44.2	160.4	0.4	15.7	4.5
2041	125.3	44.2	160.0	0.4	15.5	4.4
2042	125.2	44.1	159.7	0.4	15.3	4.4
2043	125.1	44.1	159.3	0.4	15.0	4.3
2044	125.1	44.1	159.0	0.4	14.8	4.3
2045	124.8	43.8	157.8	0.4	14.6	4.2
2046	124.8	43.8	157.5	0.4	14.4	4.2
2047	124.7	43.8	157.1	0.4	14.2	4.1
2048	124.7	43.7	156.8	0.4	14.0	4.0
2049	124.6	43.9	158.8	0.4	13.8	4.0
Maximum Daily Emissions	**133.7**	**126.7**	**288.3**	**1.0**	**41.1**	**12.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SDAPCD = County of San Diego Air Pollution Control District.

Note: (1) Mitigation Measure AQ-2 would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in the applied coatings.

Table 2.1-19 Maximum Daily Operational Emissions, Alternative 5 with Mitigation (pounds per day)

Source Category	*VOC(1)*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Year 2026						
Construction	17.7	126.7	288.3	1.0	41.1	12.4
Operation	26.6	29.8	83.9	0.3	25.5	7.3
Total Alternative 5	44.4	156.5	372.2	1.3	66.6	19.7
CEQA Baseline(2)	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment(3)	**2.5**	**73.6**	**192.0**	**0.7**	**22.7**	**6.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Year 2030						
Construction	132.2	118.9	277.9	1.0	41.0	12.2
Operation	84.6	87.9	210.9	0.8	73.2	20.6
Total Alternative 5	216.8	206.8	488.9	1.7	114.2	32.8
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**175.0**	**123.9**	**308.6**	**1.2**	**70.3**	**19.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2035						
Construction	126.0	110.8	245.3	0.8	24.9	7.8
Operation	126.5	130.0	277.6	1.1	104.8	29.3
Total Alternative 5	252.6	240.8	522.9	1.9	129.6	37.1
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**210.7**	**157.9**	**342.7**	**1.3**	**85.7**	**23.8**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**No**	**No**
Year 2050(4)						
Operation	237.7	252.0	407.5	1.6	147.9	41.7
Total Alternative 5	237.7	252.0	407.5	1.6	147.9	41.7
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**195.9**	**169.1**	**227.2**	**1.0**	**104.0**	**28.4**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Maximum Year(5)						
Construction	124.6	43.9	158.8	0.4	13.8	4.0
Operation	230.3	243.9	398.8	1.5	145.0	40.9
Total Alternative 5	354.9	287.8	557.6	1.9	158.8	44.9
CEQA Baseline	41.8	82.9	180.2	0.6	43.9	13.3
Alternative 5 Increment	**313.1**	**204.9**	**377.4**	**1.4**	**114.9**	**31.5**
SDAPCD Threshold	137	250	550	250	100	67
Exceeds Threshold?	**Yes**	**No**	**No**	**No**	**Yes**	**No**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CEQA = California Environmental Quality Act; SDAPCD = County of San Diego Air Pollution Control District.

Notes: (1) Mitigation Measure AQ-2 would limit the quantity of architectural coatings applied during construction so that VOC would not exceed 119 pounds per day in the applied coatings.
(2) The CEQA baseline is OTC existing conditions (2020).
(3) Increment = Alternative minus CEQA Baseline.
(4) Assumes there would be no construction in 2050.
(5) Maximum emissions would occur in year 2049 for all pollutants.

AQ-c: Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impacts.

HRA of Construction DPM Emissions

Table 2.1-20 presents the maximum predicted health impacts from construction of Alternative 5. The table includes estimates of individual cancer risk and chronic noncancer hazard index at the maximally exposed off-site residential, worker, and sensitive receptors.

Table 2.1-20 Summary of Health Risk Impacts from Construction of Alternative 5

Receptor Type	*Maximum Cancer Risk (chances in a million)*	*Maximum Chronic Noncancer Hazard Index*
Residential	9.7	0.003
Worker	8.2	0.03
Sensitive	9.9	0.03
Significance Threshold	**10**	**1.0**
Exceeds Threshold?	**No**	**No**

The maximum estimated cancer risks from Alternative 5 construction would be 9.7, 8.2, and 9.9 chances in a million at a residential, worker, and sensitive receptor, respectively. These values are less than the significance threshold of 10 chances in a million. The maximum estimated chronic noncancer hazard indices from Alternative 5 construction would be 0.003, 0.03, and 0.03 at a residential, worker, and sensitive receptor, respectively. These hazard indices are well below the significance threshold of 1.0.

Table 2.1-21 presents the estimated population cancer burden associated with Alternative 5 construction. The value of 0.011 additional cancer cases within the zone of impact is well below the significance threshold of 1.0.

Table 2.1-21 Population Cancer Burden from Construction of Alternative 5

Cancer Burden (additional cancer cases)	*Significance Threshold*	*Exceeds Threshold?*
0.011	1.0	No

The results of the HRA show that construction of Alternative 5 would not expose sensitive receptors to substantial levels of TACs.

Potential Exposure to Operational TAC Emissions

Operation of the Navy facilities under Alternative 5 would include the same amount of on-site diesel equipment as Alternative 4. Therefore, similar to Alternative 4, operation of the Navy facilities under Alternative 5 would not expose sensitive receptors to substantial levels of TACs.

Alternative 5 would also include the development of residential and commercial land uses. The development would be less intensive than Alternative 4. Therefore, similar to Alternative 4, TAC emissions associated with the operation of Alternative 5 would result in less than significant health impacts to sensitive receptors.

CO Hot Spots

Section 3.1.5.8 of the EIS concluded that operation of Alternative 5 would result in less than significant local CO impacts.

Impact of Nearby Sources on Future OTC Residents

The Alternative 5 land uses would be in similar locations as the Alternative 4 land uses. Therefore, similar to Alternative 4, existing emission sources near OTC would not expose future Alternative 5 residents to substantial pollutant concentrations.

Hazardous Materials Associated with Project Demolition

EIS Section 3.7.3 concluded that, with proper protocols in accordance with applicable regulations, handling and disposal of hazardous materials during demolition and construction would not result in contaminant releases or exposures of humans to harmful substances. In addition, construction of Alternative 5 would implement a demolition plan, as proposed in EIS management practice AQ MGMT-2. Impacts would be less than significant.

Mitigation Measures and Residual Impacts

No additional mitigation to reduce construction DPM emissions is feasible. As a result, cancer risks from Alternative 5 construction emissions would be potentially significant.

AQ-d: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Implementation of management practices identified in EIS Section 3.1.5.9 would minimize odor impacts from construction and operation of Alternative 5. Emissions and resulting odor impacts from Alternative 5 would generally be less than those identified for Alternative 4. Therefore, construction and operation of Alternative 5 would not create objectionable odors affecting a substantial number of people. Similar to Alternative 4, odor impacts to future OTC residents under Alternative 5 from existing land uses would be less than significant.

Mitigation Measures and Residual Impacts

Impacts would be less than significant. Therefore, mitigation is not required. However, implementation of MM AQ-2 under Impact Criterion AQ-b, which would limit the daily amount of VOC emissions from the use of architectural coatings during construction of Alternative 5, also would minimize odor emissions from this source.

GHG-a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Table 2.1-22 presents estimates of annual GHG emissions that would occur from construction and operation of Alternative 5 by analysis year. As discussed above in Section 2.1.1.1 (Significance Criteria), neither the SDAPCD nor the City of San Diego have adopted mass emission thresholds for GHG emissions under CEQA. Therefore, this analysis evaluated the significance of Alternative 5 GHG impacts by determining the alternative’s consistency with the City of San Diego CAP in Significance Criterion GHG-b.

Table 2.1-22 Annual Construction and Operational GHG Emissions, Alternative 5

Source Category	*CO_2e (MT/yr)*
Year 2026	
Construction[1]	4,261
Operation	8,338
Total	12,598
CEQA Baseline[2]	12,482
Alternative 5 Increment[3]	**116**
Year 2030	
Construction	4,261
Operation	19,092
Total	23,353
CEQA Baseline	12,482
Alternative 5 Increment	**10,870**
Year 2035	
Construction	4,261
Operation	26,960
Total	31,220
CEQA Baseline	12,482
Alternative 5 Increment	**18,738**
Year 2050	
Construction	4,261
Operation	44,808
Total	49,069
CEQA Baseline	12,482
Alternative 5 Increment	**36,587**

Legend: CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year; CEQA = California Environmental Quality Act.

Notes: [1] Construction emissions are amortized over 30 years.
[2] The CEQA baseline is OTC existing conditions (2020).
[3] Increment = Alternative minus CEQA Baseline.

GHG-b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Alternative 5 would develop high-density, transit-supportive residential and nonresidential land uses served by an on-site transit center and would further enhance other multimodal options by designing the site to encourage pedestrian- and bicycle-oriented connectivity. In addition, Alternative 5 would implement the same management practices as those identified for Alternative 4. Therefore, the GHG plan consistency findings for Alternative 4 would also apply to Alternative 5. As a result, Alternative 5 would not conflict with the 2017 Climate Change Scoping Plan, SANDAG's San Diego Forward Regional

Plan, the City of San Diego CAP, the City of San Diego General Plan, or the Midway-Pacific Highway Community Plan. This means that the incremental contribution of Alternative 5 to cumulative GHG emissions would be less than significant in regard to Impact Criterion GHG-a.

Mitigation Measures and Residual Impacts

Impacts would be less than significant. Mitigation is not required.

2.1.2 Cumulative Impacts

2.1.2.1 Description of Geographic Study Area

The ROI for assessing cumulative impacts from criteria pollutants and TACs generated by Alternative 4 or 5 includes the immediate area surrounding OTC and the larger SDAB region. The immediate area surrounding OTC is the focus of localized cumulative impacts from proposed construction and operations emissions. The SDAB domain is appropriate for evaluating how mass emissions from the action alternatives would affect cumulative levels of pollutants in the region.

The potential effects of GHG emissions generated by Alternatives 4 or 5 are by nature cumulative impacts because global sources of GHGs contribute to global climate change. Therefore, the ROI for the cumulative analysis of proposed GHG emissions is worldwide. These global impacts would be manifested as impacts on resources and ecosystems in California and San Diego County.

2.1.2.2 Relevant Past, Present, and Future Actions

EIS Section 3.1 describes the existing air quality conditions, which reflect the aggregate impacts of past and present actions within the ROI. For example, the SDAB is in attainment of all criteria pollutants regulated under the NAAQS except ozone. Additionally, the SDAB does not attain the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. These conditions define how past and present actions currently affect air quality within the ROI and provide the context for the cumulative impacts analysis.

Past, present, and reasonably foreseeable actions that have a potential to interact with the Proposed Action Alternatives and to produce cumulative air quality impacts include existing and future sources of emissions in proximity to OTC and within the greater San Diego metropolitan area and the SDAB. Vehicular traffic on Interstate 5 and city streets surrounding OTC represent the primary sources of emissions within the localized ROI. EIS Table 4.3-2 lists past, present, and reasonably foreseeable actions with an air quality designation that could interact with the action alternatives to produce cumulative air quality impacts within either the localized or regional ROI.

2.1.2.3 Cumulative Impact Analysis

Cumulative air quality impacts from project Alternatives 4 or 5 are based on the net increase in emissions that would occur from an alternative relative to the 2020 existing conditions, in combination with emissions from cumulative projects. The analysis considered the cumulative effects of these emissions in regard to Impact Criteria AQ-a through AQ-d, GHG-a, and GHG-b, as identified in the Air Quality and Greenhouse Gases section of Appendix G of the CEQA Guidelines.

2.1.2.4 Alternatives 4 and 5

AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?

The analysis of Impact AQ-a determined that operation of Alternative 4, in conjunction with other proposed residential and mixed-use projects, would most likely exceed the residential growth projections for the Midway-Pacific Highway Community. As a result, Alternative 4 would generate vehicular emissions that would exceed levels estimated in the RAQS and therefore would produce a cumulatively considerable contribution to a significant cumulative impact by conflicting with implementation of the RAQS. Implementation of MM AQ-1 potentially would reduce this significant impact by requiring the Navy to provide growth projections needed to update the RAQS. However, as updates to the air quality plans are within the jurisdiction of the SDAPCD, the effectiveness of this mitigation measure cannot be guaranteed at this time. Therefore, with mitigation, the impact of Alternative 4 under Criterion AQ-a would remain cumulatively considerable.

With respect to the NAAQS and SIP, EIS Section 3.1.5.7 demonstrated that VOC and NO_x emissions associated with construction and operation of Alternative 4 would be less than the General Conformity *de minimis* thresholds. Therefore, Alternative 4 would not conflict with or obstruct implementation of the SIP and would result in less than cumulatively considerable contributions related to Impact Criterion AQ-a.

The analysis of Impact AQ-a determined that operation of Alternative 5, in conjunction with other proposed residential and mixed-use projects, would most likely exceed the residential growth projections for the Midway-Pacific Highway Community. Therefore, with mitigation, the impact of Alternative 5 under Criterion AQ-a would remain cumulatively considerable. With respect to the NAAQS and SIP, EIS Section 3.1.5.8 demonstrated that VOC and NO_x emissions associated with construction and operation of Alternative 5 would be less than the General Conformity *de minimis* thresholds. Therefore, Alternative 5 would not conflict with or obstruct implementation of the SIP and would result in less than cumulatively considerable contributions related to Impact Criterion AQ-a.

AQ-b: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

The SDAB is in nonattainment of the NAAQS for ozone and the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. Levels of ozone, PM_{10}, and $PM_{2.5}$ within the ROI are therefore cumulatively significant. VOCs and NO_x are precursor emissions of ozone and particulate matter.

Construction of Alternative 4 without mitigation would result in emissions that would exceed the SDAPCD daily screening threshold for VOC. Emissions of all other pollutants would not exceed their respective SDAPCD emission threshold. Implementation of MM AQ-2 would reduce VOC emissions from construction to below the SDAPCD daily screening threshold. Therefore, emissions from construction of Alternative 4 with mitigation would result in less than cumulatively considerable contributions to cumulatively significant levels of ozone, PM_{10}, and $PM_{2.5}$.

Operation of Alternative 4 (plus concurrent construction) without mitigation would result in incremental emissions (Alternative 4 minus 2020 existing conditions) that would exceed the annual and daily SDAPCD screening thresholds for VOC, NO_x, and PM_{10} beginning as early as 2030 for daily VOC emissions. Emissions of all other pollutants would not exceed their respective SDAPCD emission thresholds. Implementation of MM AQ-2 would reduce VOC emissions from construction, but it would not reduce any of the operation plus construction emission exceedances to below their respective SDAPCD screening thresholds. With the implementation of proposed management practices, no additional measures are feasible to mitigate operational criteria pollutant emissions. Therefore, emissions from operation of Alternative 4 with mitigation would result in cumulatively considerable contributions to cumulatively significant levels of ozone, PM_{10}, and $PM_{2.5}$.

Construction of Alternative 5 without mitigation would result in emissions that would exceed the SDAPCD daily screening threshold for VOC. Emissions of all other pollutants would not exceed their respective SDAPCD emission threshold. Implementation of MM AQ-2 would reduce VOC emissions from construction to below the SDAPCD daily screening threshold. Therefore, emissions from construction of Alternative 5 with mitigation would result in less than cumulatively considerable contributions to cumulatively significant levels of ozone, PM_{10}, and $PM_{2.5}$.

Operation of Alternative 5 (plus concurrent construction) without mitigation would result in incremental emissions (Alternative 5 minus 2020 existing conditions) that would exceed the annual and daily SDAPCD screening thresholds for VOC and PM_{10} beginning as early as 2030 for daily VOC emissions. Emissions of all other pollutants would not exceed their respective SDAPCD emission thresholds. Implementation of MM AQ-2 would reduce VOC emissions from construction, but it would not reduce any of the operation plus construction emission exceedances to below their respective SDAPCD screening thresholds. With the implementation of proposed management practices, no additional measures are feasible to mitigate operational criteria pollutant emissions. Therefore, emissions from operation of Alternative 5 with mitigation would result in cumulatively considerable contributions to cumulatively significant levels of ozone, PM_{10}, and $PM_{2.5}$.

AQ-c: Expose sensitive receptors to substantial pollutant concentrations?

Localized Criteria Pollutant Levels

As discussed in EIS Section 4.4.1.3 (cumulative impacts), emissions from construction and operation of Alternative 4 or 5, in combination with emissions from nearby cumulative projects, would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard. Therefore, Alternatives 4 or 5 would result in less than cumulatively considerable contributions to localized criteria pollutant levels.

Toxic Air Contaminants

Contributions from cumulative sources of TACs to localized off-site project impacts would occur from nearby stationary sources and from vehicles on Interstate 5 and city streets surrounding OTC. The background cancer risk from these sources is expected to be at least 100 chances in a million (SDAPCD, 2019). Therefore, the background cancer risk is cumulatively significant.

The analysis of Impact AQ-c determined that construction of Alternative 4 would generate TACs from on-site diesel equipment that would result in significant cancer risks to nearby sensitive receptors. When added to impacts from cumulative projects, construction of Alternative 4 would produce cumulatively considerable contributions to significant cumulative cancer risks adjacent to OTC. Proposed management practices would minimize construction diesel emissions and their associated health risks (see Section 3.1.5.9); however, the contribution would be cumulatively considerable.

The analysis of Impact AQ-c also determined that operation of Alternative 4 would generate TACs that would result in less than significant health impacts to sensitive receptors. Therefore, operation of Alternative 4 would produce less than cumulatively considerable contributions to cumulative cancer risks adjacent to OTC.

The analysis of Impact AQ-c determined that construction of Alternative 5 would result in cancer risks to nearby sensitive receptors that are just below the significance threshold (i.e., 9.9 chances in a million versus a significance threshold of 10). Therefore, when added to impacts from cumulative projects, construction of Alternative 5 would produce cumulatively considerable contributions to significant cumulative cancer risks adjacent to OTC. Proposed management practices would minimize construction diesel emissions and their associated health risks (see Section 3.1.9.3); however, the contribution would be cumulatively considerable.

The analysis of Impact AQ-c also determined that operation of Alternative 5 would generate TACs that would result in less than significant health impacts to sensitive receptors. Therefore, operation of Alternative 5 would produce less than cumulatively considerable contributions to cumulative cancer risks adjacent to OTC.

AQ-d: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Sources of odors from cumulative projects in proximity to OTC mainly include stationary sources such as auto body shops, gas stations, and restaurants. Existing and future cumulative sources of odors would be required to comply with SDAPCD Rule 51 (Nuisance) and the city's "Air Contaminant Regulations" (San Diego Municipal Code Section 142.0710). Therefore, cumulative projects in proximity to OTC would result in less than significant cumulative impacts to odor levels.

The analysis of Impact AQ-d determined that construction and operation of Alternative 4 or 5 would not create objectionable odors affecting a substantial number of people. When added to odor impacts from cumulative projects, Alternative 4 or 5 would produce less than cumulatively considerable contributions to cumulative odor impacts adjacent to OTC. Implementation of management practices for the construction and operation of Alternative 4 or 5 would help to minimize odor generation (see Section 3.1.9.3).

Greenhouse Gases

The impact of proposed GHG emissions is inherently cumulative. Therefore, the analyses performed for impact criteria GHG-a and GHG-b are cumulative in nature. The results of these analyses determined that construction and operations of Alternative 4 or 5 would result in less than cumulatively considerable contributions to global GHG levels.

2.2 Transportation

A transportation system and the associated infrastructure by which it functions includes the public roadway network, various modes of public transportation, airports, railroads, pedestrian/bicycle facilities, and waterborne transportation modes required for the movement of people, materials, and goods. Implementation of a Proposed Action Alternative has the potential to affect the transportation infrastructure that provides access to and within the local area and network. Sections 3.2.1, 3.2.2, and 3.2.3 of the EIS present a description of the regulatory setting, environmental setting, and assessment methodology, respectively.

2.2.1 Impacts Determination

2.2.1.1 Impacts Summary

Table 2.2-1 presents a summary of impacts related to transportation for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.2-1 Impacts Related to Transportation

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
XVII. Transportation (TRANS-) Would the project:	-	-	-	-
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	-	-	**X**	-
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	-	-	**X**	-
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	-	-	**X**	-
d) Result in inadequate emergency access?	-	-	**X**	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

Approach for the Determination of Significance

CEQA Statute Section 15064.3 states that traffic-related impacts for a project should be evaluated based on the project's VMT. The statute divides the analysis process into four subdivisions, including land use projects, transportation projects, qualitative analysis, and methodology. For transportation projects, VMT is calculated based on individual vehicle trips and their trip lengths.

According to the City of San Diego draft guidance, thresholds for significance for vehicle traffic are based on regional averages for VMT per unit (such as per capita or per employee). The guidance outlines four primary steps in the process. First, screening criteria are applied to determine whether VMT analysis is required. This process is governed by the CEQA guidelines. Next, an analysis methodology outlines the procedures for evaluating VMT for transportation projects. Finally, projects that are found to have a significant impact based on VMT thresholds are required to implement mitigation measures to reduce impacts to less than a significant level (to the extent feasible). In addition to the VMT analysis noted above, the city also requires a Local Mobility Analysis to identify any off-site infrastructure improvements in the project vicinity (including site access and circulation needs) that may be triggered with the development of the Proposed Action.

Significance criteria within local guidelines also apply to parking available and capacity. Under City of San Diego guidelines, if a proposed project would be deficient by more than 10 percent of the required amount of parking and would either substantially affect the availability of parking in an adjacent residential area or severely impede the accessibility of a public facility such as a park or beach, the impact would be considered significant.

2.2.1.2 No Action/No Project Alternative Impacts

TRANS-a: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No impact. Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. NAVWAR would continue to operate at OTC and no change would occur. Therefore, there would be no traffic-related impact to local plans or policies from the No Action Alternative.

TRANS-b: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No impact. Given that the No Action Alternative would not add trips to the network, there would be no increase in VMT within the ROI and therefore no impact to the transportation facilities. There would be no impact based on CEQA guidelines for the No Action Alternative.

TRANS-c: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No impact. The No Action Alternative would not implement any new transportation features. Thus, there would be no impact due to geometric changes to the network or other design features from implementation of the No Action Alternative. Crash data provides a general indication of geometric features that may contribute to existing levels of safety for facilities within the ROI. Evaluation of existing crash data shows no fatal crashes during a 5-year period, with 52 crashes during the same period on the ROI network near OTC. Nearly 50 percent of the crashes occurred along Pacific Highway between Kurtz Street and Witherby Street. Three crashes were classified as rear-end, and three were classified as hit object, which could also indicate crashes related to existing infrastructure features, especially intersections. The No Action Alternative would not result in project-related infrastructure changes, there would be no impact to the design of transportation facilities within the ROI.

TRANS-d: Result in inadequate emergency access?

No impact. Under the No Action Alternative, background traffic increases would alter operation of the transportation infrastructure within the ROI, but no trips would be added due to this alternative. Therefore, emergency access would remain the same under the No Action Alternative and there would be no impact to emergency access due to the No Action Alternative.

Given that existing OTC operations would not add additional VMT above baseline levels, the No Action Alternative would result in no impact on emergency access. The EIS Appendix E describes the baseline analysis of VMT for future conditions for comparison with Alternative 4 and 5.

2.2.1.3 Alternative 4 Impacts

TRANS-a: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Construction

Less than significant. Alternative 4 construction activities would not conflict with local community plans and airport development plans. Implementation of this alternative would require construction phasing and sequencing plans that would minimize the potential for transportation impacts, considering strategies such as off-peak material deliveries, lane closure restriction times, and staggered work schedules. Alternative 4 would potentially include development and implementation of a Transportation Management Plan that would identify potential issues and alleviate these through a variety of traffic control strategies, public information campaigns, and operational strategies.

Local plans also include considerations for transit, bicycle, and pedestrian facilities. Of critical importance for potential construction impacts is access to and availability of transit, bicycle, and pedestrian facilities, including accommodations and access during construction. Construction activities would be consistent with local ordinances and policies. The EIS Appendix E Section 23 provides a full overview of construction strategies and proposed methods to accommodate transportation system users during construction. Alternative 4 construction activities would result in less than significant impacts with regard to conflicts with existing plans and ordinances, and no mitigation measures are required.

Operations

Less than significant. The analysis of traffic-related impacts from Alternative 4 incorporates guidelines provided by the City of San Diego as well as the California Department of Transportation, and there are no conflicts with program, plans, ordinances, or policies addressing the circulation system. For Alternative 4, the addition of the transit center reduces what would otherwise be vehicle trips, and there would also be some induced demand for vehicle trips accessing the transit center. Alternative 4 operations would not significantly conflict with existing programs, plans, or policies related to transportation, impacts would be less than significant, and no mitigation measures would be required.

Mitigation Measures and Residual Impacts

No mitigation measures are required, as Alternative 4 would be consistent with programs, plans, and policies and less than significant impacts would occur as a result of implementation.

TRANS-b: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Construction

Less than significant. For future construction activities, designers would prepare, and contractors would implement a traffic control plan that accommodates users during construction. In addition, a Transportation Management Plan would outline strategies to alleviate short-term delays through strategies such as off-peak lane closures (the traffic control plan is one component of the Transportation Management Plan). Although Alternative 4 construction activities could contribute to temporary traffic delays in the immediate vicinity of OTC, this would not conflict with CEQA Guidelines section 15064.3, subdivision (b). Impacts would be less than significant and appropriately managed during construction.

Operations

Less than significant. The results of the VMT analysis show less than significant impacts when comparing VMT per resident to regional VMT averages and threshold values. This finding is based on the Proposed Action VMT per resident and VMT per employee being less than their respective significance thresholds. Table 2.2-2 includes the VMT comparison for Alternative 4 (see the EIS Appendix E Section 26 for additional detail).

Table 2.2-2 Alternative 4 VMT Per Resident and VMT Per Employee Regional Comparison

Proposed Action Alternative	*2050 Regional VMT Per Resident*	*Significance Threshold Per Resident*	*Proposed Action 2050 VMT Per Resident*	*2050 Regional VMT Per Employee*	*Significance Threshold Per Employee*	*Proposed Action 2050 VMT Per Employee*
Alternative 4	14.4	12.2	4.5	21.2	18.0	11.1

Under the VMT analysis in the EIS Appendix E (Sections 24 through 26), analysts screened projects to determine if they fit the criteria for further analysis, calculated metrics, and then compared them with averages for the region. SANDAG travel demand models calculated these metrics and reported the results similar to the analysis described earlier for each alternative. As outlined in the table above, the results of comparison to regional/threshold VMT are within CEQA thresholds for the Proposed Action Alternatives. The project would not exceed 15 percent below the existing regional or city VMT per capita or employee (the significance threshold per resident or per employee). Thus, Alternative 4 operations would be consistent with CEQA Guidelines section 15064.3, subdivision (b) and impacts would be less than significant.

Mitigation Measures and Residual Impacts

Since the VMT analysis shows no significant impacts, mitigation measures are not required to address compliance with CEQA Guidelines section 15064.3, subdivision (b).

TRANS-c: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Less than significant. As an example of a major infrastructure modification, Caltrans has prepared a concept plan for reconstructing the Interstate 5/Old Town Avenue interchange. Construction activities for major projects such as the interchange reconstruction could impact traffic circulation, and efficient construction phasing would be determined in the future. Many of the plans and suggested mitigation strategies are conceptual at this stage, and detailed design would be performed in the future. However, considerations for adequate design features should be made in the future for implementation of any of the measures proposed. During construction, contractors and agency personnel can proactively monitor crash data, assess project inspection records, and perform field safety audits to ensure adequate levels of safety. There would be less than significant impacts from construction of Alternative 4.

Operations

Less than significant. Alternative 4 includes planning level data and information to assist with the assessment of development alternatives, and formal geometric design of roadways and intersections has not been initiated. Designers would consider the potential hazards and ensure that future geometric designs are adequate for appropriate levels of safety. Roadside hazards would be mitigated through the use of protective devices such as guardrail to prevent roadway departure crashes. There would be less than significant impacts from implementation of Alternative 4.

Mitigation Measures and Residual Impacts

Impacts from implementation of Alternative 4 are not significant under CEQA guidelines; therefore, no mitigation measures are required.

TRANS-d: Result in inadequate emergency access?

Construction

Less than significant. Alternative 4 construction activities would add trips to the ROI network, with the potential to reduce traffic flow within and around OTC. The project could potentially affect emergency access during construction due to capacity restriction and lane closures. The construction contractor would prepare and implement a traffic control plan that would ensure adequate accommodation for emergency access. Therefore, impacts from Alternative 4 would be less than significant.

Operations

Less than significant. Adequate access would be provided for emergency vehicles under this alternative. Strategies for emergency access include route planning and coordination between first responders on operational procedures. Implementation of Alternative 4 would be expected to have less than significant impacts to emergency access.

Mitigation Measures and Residual Impacts

Impacts from implementation of Alternative 4 would be less than significant under CEQA guidelines; therefore, no mitigation measures are required.

2.2.1.4 Alternative 5 Impacts

Less than significant with mitigation incorporated. Impacts from the buildout of Alternative 5 would be similar to those of Alternative 4 noted above, with varying levels of added trips on the ROI network. Based on the VMT analysis results, there would be less than significant impacts from implementation of Alternative 5, and no mitigation would be required. Table 2.2-3 includes the VMT comparison for Alternative 5 (see EIS Appendix E Section 26 for additional detail).

Table 2.2-3 Alternative 5 VMT Per Resident and VMT Per Employee Regional Comparison

Proposed Action Alternative	*2050 Regional VMT Per Resident*	*Significance Threshold Per Resident*	*Proposed Action 2050 VMT Per Resident*	*2050 Regional VMT Per Employee*	*Significance Threshold Per Employee*	*Proposed Action 2050 VMT Per Employee*
Alternative 5	14.4	12.2	5.3	21.2	18.0	11.5

2.2.2 Cumulative Impacts

A cumulative impact is an impact on the environment that results after adding the incremental impact of a Proposed Action to other past, present, and reasonably foreseeable future actions. The cumulative impacts analysis for transportation incorporates the affected environment, traffic growth in future years, and the alternatives with full buildout by 2050. The year 2050 also corresponds with the time horizon associated with many of the identified RTPs described in the EIS Table 4.3-1. EIS Table 4.3-2 identifies the cumulative projects considered in this analysis. As shown in EIS Table 4.3-2, the projects identified capture short-term construction traffic-related projects and long-term regional transportation improvement plans and programs. EIS Table 3.2-6 highlights no significant impacts to transportation in 2050 under the cumulative impact scenario and based on VMT analyses for the Proposed Action.

2.3 Aesthetics (Visual Resources)

Aesthetic or visual resources are the natural and manmade features of the landscape that can be seen and perceived by viewers and this viewing contributes to the public's perception and interaction with the environment. Visual or aesthetic resource impact studies must determine if the project's physical characteristics, potential visibility, and the extent that the project's presence would negatively (or positively) change the perceived visual character and quality of the environment. To ensure that potential changes to visual quality resulting from a project are adequately and objectively considered, it is critical that an accepted, systematic evaluation process be used.

In general terms, the visual environment is considered to be a vital component of an area's overall vibrancy and value. High visual quality areas generally have higher quality development, protected open space, and higher land values.

The ability of the landscape to undergo alteration without losing its visual character is considered important for the maintenance of high scenic value and cohesive neighborhood character. As development deviates from the natural landscape, visual impacts can increase, especially if the development pattern is incoherent, chaotic, or of poor design. The visual impacts of a project are determined by a number of factors, including effects on the visual character and quality (e.g., form, line, color, and texture), visual exposure, viewer sensitivity, and the number of viewers who are expected to see the project. In certain areas such as this one, views are also an important resource for a community.

A description of the area of visual effect (AVE), approach to analysis, regulatory setting, and affected environment are presented in Sections 3.3.1, 3.3.4.1, 3.3.2, and 3.3.3 the EIS, respectively.

2.3.1 Impacts Determination

2.3.1.1 Impacts Summary

Table 2.3-1 presents a summary of impacts related to aesthetics for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.3-1 Impacts Related to Aesthetics

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
I. AESTHETICS (AES-) Would the project:	-	-	-	-
a) Have a substantial adverse effect on a scenic vista?	**X**	-	-	-
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	**X**	-	-	-
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	**X**	-	-	-
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	**X**	-	-	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

Approach for the Determination of Significance

Local agencies can expand upon or provide more guidance on the four thresholds of potential significant impact if adopted by local agencies. The City of San Diego (2016) has published additional CEQA significance determination for visual effects and neighborhood character, and the following will be evaluated:

Views (additional guidance on CEQA significance criteria AES-a):

Projects that would block public views from designated open space areas, roads, or parks or to significant visual landmarks or scenic vistas (Pacific Ocean, downtown skyline, mountains, canyons, waterways) may result in a significant impact. To meet this significance threshold, one or more of the following conditions must apply:

SD-a. The project would substantially block a view through a designated public view corridor as shown in an adopted community plan, the General Plan, or the Local Coastal Program.

SD-b. The project would cause substantial view blockage from a public viewing area of a public resource (such as the ocean) that is considered significant by the applicable community plan.

SD-c. The project exceeds the allowed height or bulk regulations, and this excess results in a substantial view blockage from a public viewing area.

SD-d. The project would have a cumulative effect by opening up a new area for development, which will ultimately cause "extensive" view blockage.

Neighborhood Character/Architecture (additional guidance on CEQA significance criteria AES-b and AES-c):

Projects that severely contrast with the surrounding neighborhood character. To meet this significance threshold, one or more of the following conditions must apply:

SD-e. The project exceeds the allowable height or bulk regulations and the height and bulk of the existing patterns of development in the vicinity of the project by a substantial margin.

SD-f. The project would have an architectural style or use building materials in stark contrast to adjacent development where the adjacent development follows a single or common architectural theme (e.g., Gaslamp Quarter, Old Town).

SD-g. The project would result in the physical loss, isolation or degradation of a community identification symbol or landmark (e.g., a stand of trees, coastal bluff, historic landmark) which is identified in the General Plan, applicable community plan or local coastal program.

SD-h. The project is located in a highly visible area (e.g., on a canyon edge, hilltop or adjacent to an interstate highway) and would strongly contrast with the surrounding development or natural topography through excessive height, bulk, signage, or architectural projections.

SD-i. The project would have a cumulative effect by opening up a new area for development or changing the overall character of the area (e.g., rural to urban, single-family to multi-family). As with views, cumulative neighborhood character effects are usually considered significant for a community plan analysis, but not necessarily for individual projects. Project-level mitigation should be identified at the community plan level. Analysts should also evaluate the potential for a project to initiate a cumulative effect by building structures that substantially differ from the character of the vicinity through height, bulk, scale, type of use, etc., when it is reasonably foreseeable that other such changes in neighborhood character will follow.

Note: Item SD-g (Loss of any distinctive or landmark tree or community identification symbol) is not carried forward in the impact analysis below, as it does not apply to the Proposed Action. Although the existing structures on OTC are eligible for listing in the National Register of Historic Places, they have not been designated as such. See Section 2.6 for an analysis of impacts to Cultural Resources. Although the size of the warehouse buildings on OTC dominate the overall visual character of the area, they are not considered to be positive visual resources or represent a landmark and the structures are not part of the identified General Plan or community plan or local coastal program.

Landform Form Alteration (additional guidance on CEQA significance criteria AES-b)

Substantial change in the existing landform? Projects that significantly alter the natural landform can result in a significant impact. To meet this significance threshold, typically the following conditions must apply:

SD-j. The project would alter more than 2,000 cubic yards of earth per graded acre by either excavation or fill. Grading of a smaller amount may still be considered significant in highly scenic or environmentally sensitive areas. Excavation for garages and basements are typically not held to this threshold.

SD-k. The project would disturb steep hillsides in excess of the encroachment allowances of the Environmentally Sensitive Lands regulations (Land Development Code Chapter 14, Article 3, Division 1).

SD-l. The project would create manufactured slopes higher than 10 feet or steeper than 2:1 (50 percent).

SD-m. The project would result in a change in elevation of steep hillsides as defined by the San Diego Municipal Code Section 113.0103 from existing grade to proposed grade of more than 5 feet by either excavation or fill, unless the area over which excavation or fill would exceed 5 feet is only at isolated points on the site.

Note: all Landform Form Alteration criteria (Items SD-j to SD-m) are not carried forward in the analysis below, as the Proposed Action occurs in an urban area that is already developed. Although grading would include more than 2,000 cubic yards, it would primarily be completed for the purposes of garages and basements. In addition, no existing landform is present on-site, nor would one be created as a result of this project.

Development Features (additional guidance on CEQA significance criteria AES-c)
Projects that have a negative visual appearance. To meet this significance threshold, one or more of the following conditions must apply:

SD-n. The project would create a disorganized appearance and would substantially conflict with city codes (e.g., a sign plan which proposes extensive signage beyond the city's sign ordinance allowance).

SD-o. The project significantly conflicts with the height, bulk, or coverage regulations of the zone and does not provide architectural interest (e.g., a tilt-up concrete building with no offsets or varying window treatment).

SD-p. The project would include a crib wall or retaining wall, or noise walls greater than 6 feet in height and 50 feet in length with minimal landscape screening or berming where the walls would be visible to the public.

SD-q. The project is large and would result in an exceeding monotonous visual environment (e.g., a large subdivision in which all the units are virtually identical).

SD-r. The project includes a shoreline protection device in a scenic, high public use area, unless the adjacent bluff areas are similarly protected.

Note: item SD-r is not included in the impact analysis for this project, as the Proposed Action is not located in the coastal zone, and therefore coastal structures do not apply to this project and therefore are dropped from any other discussion.

Light and Glare (additional guidance on CEQA significance criteria AES-d)
Substantial light or glare which would adversely affect daytime or nighttime view in the area from a project that emits or reflects a significant amount of light and glare. To meet this significance threshold, one or more of the following must apply:

SD-s. The project would be moderate to large in scale, more than 50 percent of any single elevation of a building's exterior is built with a material with a light reflectivity greater than 30 percent (see Land Development Code Section 142.07330(a)), and the project is adjacent to a major public roadway or public area.

SD-t. The project would shed substantial light onto adjacent, light-sensitive property or land use, or would emit a substantial amount of ambient light into the nighttime sky.

The impact analysis below relies on the in-depth visual technical study prepared for the EIS (see the EIS Appendix F) and refers to figures in the appendix, instead of duplicating the information in this section. The affected environment description for this analysis, including figures, is presented in Section 3.3.3 of the EIS.

2.3.1.2 No Action/No Project Alternative Impacts

By definition, the No Action Alternative would not result in any changes to the visual environment, and the current facilities and surface lots would remain on OTC in their current condition. The No Action Alternative would result in less than significant impacts to aesthetics.

2.3.1.3 Alternative 4 Impacts

The proposed development under Alternative 4 includes buildings up to 350 feet tall. Figure 2.3-1 shows a three-dimensional model of possible massing that would accommodate the program needs of this alternative. The construction on OTC would occur in phases over a 30-year period, with the NAVWAR facilities being constructed in the first 5 years, prior to the construction of the mixed-use development.

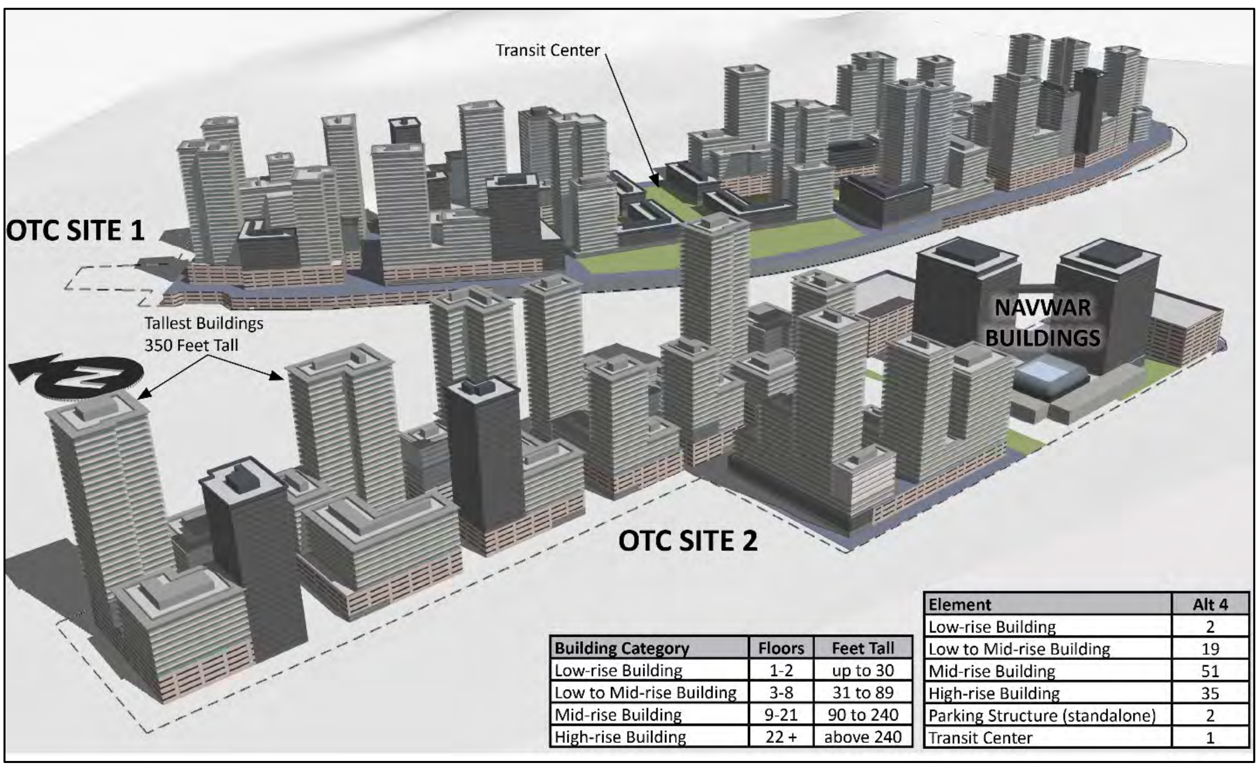


Figure 2.3-1 General Building Massing of Alternative 4

This diagram is not intended to show an actual architectural design nor to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the programmatic requirements of the alternatives. The diagram does show the major physical elements that would be likely to have a high level of visual prominence. The table presented on the diagram provides a summary of the major physical features of the alternative including floors, heights, and number of total buildings being considered. Simulations of the proposed development under Alternative 4 in the context of the existing visual setting from key observation points (KOPs) selected from within a 1-mile radius of OTC are presented in EIS Appendix F, Attachment B.

Of the 109 buildings shown in the massing diagram, 2 percent would be low rise below 30 feet, 19 percent would be low-to mid-rise from 31 to 89 feet, 47 percent would be mid-rise from 90 to 240 feet, and the remaining 32 percent would be high-rise buildings representing a height up to 350 feet tall. NAVWAR parking requirements would mostly be met by standalone parking. Standalone parking structures are considered low-to mid-rise buildings. Major parking lots and structures would be required to support the parking requirements needed for the total gross and net square feet of the building complex. In this alternative, much of the parking would be below a 30-foot-tall deck with much of the vehicular circulation and parking taking place below this deck and plazas, promenades, parks, and smaller streets on top of these decks. This alternative would also accommodate a major transit center and public spaces that would divide the OTC Site 1 into two separated complexes or grouping of buildings.

AES-a: Have a substantial adverse effect on a scenic vista?

Potentially significant impact. Structures that would be constructed under Alternative 4 would substantially block views both from private locations and various public locations including parks, open space, public realm spaces and from roadway rights-of-way. The proposed height and massing of the proposed buildings for all high-rise and mid-rise buildings would result in a substantial view blockage from many public viewing areas of regionally and sub-regionally important viewing scenes including the Pacific Ocean, Mission Bay, San Diego Bay, San Diego River, Cabrillo Point, and the Point Loma Peninsula. Additional detail is provided in the responses to the City of San Diego significance determination criteria below.

SD-a. Would Alternative 4 substantially block a view through a designated public view corridor as shown in an adopted community plan, the General Plan, or the Local Coastal Program? and

SD-b. Would the Alternative 4 result in a substantial view blockage from a public viewing area of a public resource (such as the ocean) that is considered significant by the applicable community plan?

Based on adopted plans and policies, the project would have the potential to block views of several viewing scenes generally identified in the General Plan or community plans. OTC is located within the City of San Diego's Midway-Pacific Highway Community Planning Area; however, OTC is federal property, and therefore the community does not have jurisdiction over its land use. The **Midway-Pacific Highway Community Plan** (City of San Diego, 2018) does not have any specific view corridors identified for protection within the Dutch Flats Urban Village section (where OTC is located). Policies in other planning documents in the surrounding area are summarized briefly here to provide context:

The General Plan (City of San Diego, 2013, 2015) provides policy guidance intended to balance the needs of a growing population while enhancing quality-of-life for current and future residents. The **Urban Design Element** of the General Plan includes the following guidance on views: **UD-A.3.** Design development adjacent to natural features must be done in a sensitive manner to highlight and complement the natural environment in areas designated for development. Protect views from public roadways and parklands to natural canyons, resource areas and scenic vistas. Preserve views and view corridors along and/or into waterfront areas from the public right-of-way by decreasing the heights of buildings as they approach the shoreline, where possible.

The **Mobility Element** of the General Plan includes the following guidance on views: Under the discussion of Street Layout, Design and Operations under the Mobility Element: The quality of our traveling experience is also influenced by the scenic quality of the area traversed. San Diego enjoys many scenic vistas of our coastline, canyons, and other open spaces. Scenic highways and routes provide an opportunity for people to experience these views while traveling through the city.

The **Uptown Community Plan** (City of San Diego, 2019c) includes the following guidance on views: The Uptown Community vision is to: Preserve existing views of undeveloped natural canyons and views of San Diego Bay, Downtown and Mission Valley from ridgelines is a high priority for the community.

The **Peninsula Community Plan** (City of San Diego, 2011) includes the following guidance on views: Dramatic ocean and downtown views are scattered throughout the community, creating a unique visual environment. Development objectives include protecting unique natural and manmade features, improving community entry points, and preserving and enhancing significant views of the bay and ocean.

Table 2.3-2 identifies 10 sub-regionally important viewing scenes that have the potential to be blocked by the proposed development on OTC under Alternative 4. These viewing scenes include coastline (bay and ocean), canyons and other natural areas, as well as developed scenic features such as the Downtown San Diego skyline. Alternative 4 would potentially block from 11 percent to 62 percent of the total views, with special concern for affected views of San Diego Bay, Coronado, Mission Bay, San Diego River, Cabrillo Point, and the Point Loma Hillside.

Table 2.3-2 Summary of Alternative 4 Viewing Scene Impacts

Viewing Scene(1)	*Percent of View Blocked*	*Persons (based on 2016 pop.) within the Viewshed Limits*	*Persons (based on 2016 pop.) Likely to see the Site*(2)	*Persons (based on 2035 pop.) within the Viewshed Limits*	*Persons (based on 2035 pop.) Likely to see the Site* (2)
1. San Diego River	61.89%	3,876	2,399	3,776	2,337
2. Mission Bay	37.93%	3,876	1,470	3,776	1,432
3. Mission Valley North	61.06%	2,143	1,309	2,314	1,413
4. Presidio/Mission Hills	32.26%	11,560	3,729	13,852	4,468
5. Pacific Ocean West	25.94%	4,220	1,095	3,874	1,005
6. Pacific Ocean Southwest	35.85%	2,550	914	1,994	715
7. San Diego Bay/Coronado	36.72%	6,038	2,217	6,782	2,490
8. Cabrillo	23.30%	4,927	1,148	4,538	1,058

Viewing Scene[(1)]	*Percent of View Blocked*	*Persons (based on 2016 pop.) within the Viewshed Limits*	*Persons (based on 2016 pop.) Likely to see the Site*[(2)]	*Persons (based on 2035 pop.) within the Viewshed Limits*	*Persons (based on 2035 pop.) Likely to see the Site* [(2)]
9. Pt Loma Hillside	44.16%	9,059	4,000	9,162	4,046
10. Downtown Skyline	11.73%	1,158	136	2,606	306
Average Percent of View Blocked[(1)]	37.08%	24,154[(3)]	8,957	25,528[(3)]	9,467

Legend: % = percent; Pop. = Population.

Notes: (1) Percent of view area affected is based upon a topographic model only and does not include existing buildings and structures.

(2) Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.

(3) Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

Changes in view quality were further analyzed from 10 KOPs (refer to EIS Section 3.3.3, *Affected Environment*, for how these points were selected). A simulation of the proposed development was inserted into the photo from each KOP to analyze the degree of view blockage that would be anticipated at that location. Simulations showing views of the proposed development under Alternative 4 from all 10 KOPs are provided in EIS Appendix F, Attachment B. As shown below in Table 2.3-3, KOPs 2, 3, 4, 5, and 6 would experience less than significant (none to moderate adversity) view blockage under Alternative 4. Potentially significant impacts (moderately high and high adversity) would occur at KOPs 1, 7, 8, 9, and 10.

Table 2.3-3 Summary of Alternative 4 View Quality Impacts

Key Observation Point	*Viewing Blockage Expected*[(1)]	*Positioning of Blockage*[(1)]
KOP 1 (IN-1): Interstate 5 Southbound	Moderately High Adversity	Silhouette with the Sky
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderate Adversity	Can See Over Some Buildings
KOP 3 (NM-2): Sports Arena & Rosecrans North Midway Sub-Area	Moderate Adversity	Silhouette with the Sky
KOP 4 (CM-2): Midway Drive & OTC Site 2 in Central Midway Sub-Area	Moderate Adversity	Silhouette with the Sky
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	None, Low or Moderately Low	No Position Impact
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	None, Low or Moderately Low	No Position Impact
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 9 (NP-3): Altamirano & Presidio Drive in North Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 10 (CH-2): Hayden & Linwood in Central Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon

Note: (1) Impacts determined by Amount of View Blockage as well as the Position of the Blockage based on context. View Blockage Gradient: None, Low or Moderately Low; Moderate Adversity; Moderately High Adversity; High Adversity. Moderately high and high impacts are considered a significant impact. Position Blockage Gradient: No Position Impact; Can see over some buildings; Silhouettes with the sky; Silhouettes against the ocean horizon.

SD-c. Would Alternative 4 exceed the allowed height or bulk regulations, and this excess results in a substantial view blockage from a public viewing area?

In November 2020, San Diego voters passed Measure E, which ends the 30-foot height limit for new buildings in the Midway District. However, there is an outstanding lawsuit challenging Measure E's validity, that could delay the measure's implementation. Currently, OTC is federal property and lands owned by the federal government are not subject to local land use regulations or Municipal Codes. The proposed height (maximum of 350 feet) and massing of all high-rise and mid-rise buildings proposed under Alternative 4 would result in potentially significant view blockage from many public viewing areas of regionally and sub-regionally important viewing scenes including the Pacific Ocean, Mission Bay, San Diego Bay, San Diego River, Cabrillo Point, and the Point Loma Peninsula, as shown above in Tables 2.3-2 and 2.3-3.

SD-d. Would Alternative 4 have a cumulative effect by opening up a new area for development, which will ultimately cause "extensive" view blockage?

The development proposed under Alternative 4 would be contained within OTC Site 1 and OTC Site 2 and would not open up new areas within the Midway-Pacific Highway Community Planning Area for development. Other development outside of OTC on land that is not federally owned would be subject to the Midway-Pacific Highway Community Plan guidelines and subject to approvals and public review per local laws and regulations.

Mitigation Measures and Residual Impacts

In order to minimize potentially significant impacts to view corridors, view blockage, and view quality, the following considerations would be applied during site-specific planning and design:

- **VIS-1: Limitations to Avoid Silhouetting against the Ocean Horizon.** Any efforts that can be done to limit the number of buildings that are silhouetted against the horizon line of the Pacific Ocean would be instrumental in lowering the adversity of view impacts. This type of intrusion into the horizon line causes the rare occurrence of a very open and unimpeded view over the ocean to be impacted. As can be seen in some areas with offshore drilling rigs that are relatively small from a distance, they are very impactful in breaking the continuous line of the horizon. The ability to step down buildings with perhaps some buildings still piercing the horizon line would be an alternative to consider that would minimize this impact. A single tower or multiple tall towers that break this line without a transition of other buildings around it that are shorter focuses the attention on a stark contrast in scale change. Specific areas of concern include the northwest views from North, Central and South Mission Hills sub-areas looking toward the Pacific Ocean to the west. If the north end of OTC Site 1 is tapered and pulled back from this location, many public and private views would still see the Pacific Ocean to the west and northwest, although much of the view may still be blocked by buildings.
- **VIS-2: Height Limitation to Avoid Silhouetting against the Sky.** Of lesser impact, but still important to consider, would be any buildings that push above the natural landforms of the area. A building that extends above the top of landforms from various viewpoints would be more impactful than a building that is low enough to see landforms to the west (Cabrillo Point and the Point Loma Peninsula as seen from the east) and to the east (Mission Hills/Presidio and North Mission Valley landforms as seen from the west). It would not be possible to avoid sky silhouetting in all areas of the viewshed. Only those viewing locations at higher elevations would

be positively affected by this change. Particular areas of concern would include buildings seen from the Midway District area around Sports Arena, Rosecrans, and Midway. The Old Town State Park area would benefit by lowered building heights for State Park gathering locations where the stark contrast in heights is emphasized by the existing low building heights.

- **VIS-3. Stepping Down Building Heights to Adjacent Areas.** If some buildings were kept tall and pierced the ocean's horizon line or those of adjacent landforms, it would still be effective to lower the overall sense of scale dominance by stepping down buildings in all directions. As seen from the Interstate 5 freeway, having buildings on the north end step upward to the taller buildings would assist in minimizing the stark contrast of scale. Stepping down building heights would also help in the Midway District, and views from Mission Hills could be improved as well. As seen from the Presidio, the stepping down of buildings would help with the transition to the rest of the surrounding existing development. From Central Mission Hills, a better transition would be very helpful in minimizing view impacts if the north end were adjusted to taper these buildings more in the northerly direction.
- **VIS-4. View Corridors to be Kept Open.** Making a tower taller and creating gaps between other buildings may resolve some view corridor problems. However, what may allow some view corridors to be more open may force the bulk of the massing to another location that may increase the view blockage in another area view corridor. But the San Diego subregion has specific viewing locations with public and major private views in known areas. It has clear sub-regionally important viewing scenes that are most visible to these viewing locations. With some level of effort, it would be possible to find the best locations for building gaps and building orientation. The important viewing scenes of greatest concern tend to be from the northeast looking to the southwest with views of San Diego Bay, Coronado, Cabrillo Point, and the Pacific Ocean. Areas in Central and South Mission Hills would not have this southwest looking view blocked, but North Mission Hills would. For those views from the southwest looking back to the Presidio and Mission Valley, the angle of the view corridor left open for the North Mission Hills area would benefit those looking back to Mission Hills as well. The other important view corridor tends to be in Central Mission Hills, looking to the northwest with views of Mission Bay, the San Diego River, and the Pacific Ocean to the west. This corridor could be kept more open with the transition downward of some of the heights of the buildings at the north end of the building complex (refer to VIS-3) instead of a gap between buildings.
- **VIS-5. Centralized Massing to Minimize the Number of Buildings.** Narrow but tall buildings tend to make the complex look like a city downtown instead of a major complex of related buildings. This phenomenon is caused by the fact that it is difficult to tell the scale of buildings. A tall building is more often a full city block size, so many may perceive of the size of a complex like this to be as many blocks long as there are individual buildings. In addition, the offsets of buildings that are not aligned with each other can contribute to more of the corridors being blocked. This would be similar to a forest of trees that are not aligned with each other compared to an agricultural orchard where a person can see unobstructed down through certain viewing angles, but not at all from other angles. To avoid this phenomenon, less towers that are more massive in bulk and that are aligned with the northeast to southwest corridor alignment would improve the opening of view corridors and lower the sense of scale that the multiple buildings may be exaggerating.

With these measures implemented, the impacts would be minimized, but would still remain significant and unavoidable.

AES-b: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Potentially significant impact. No natural resources would be impacted by the construction of Alternative 4 as OTC Site 1 and OTC Site 2 are already developed with buildings and parking lots. Both Interstate 8 and Interstate 5 are eligible for scenic designation, but the City of San Diego has not requested Caltrans to designate them as scenic. The City of San Diego has a locally designated 59-mile scenic route that passes through Old Town, Presidio Park, and North Mission Hills. The development under Alternative 4 would block some views from both Interstate 8 and Interstate 5, as well as the City of San Diego's scenic route.

Mitigation Measures and Residual Impacts

Measures VIS-1 to VIS-5, described above, would be applied to minimize impacts. However, even with these measures, the impacts under Alternative 4 would remain significant and unavoidable.

AES-c: If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Potentially significant impact. Aesthetic quality impacts must consider the context of the adjacent area and the amount of contrast that Alternative 4 would have with that context. While the specific details for the site layout and building design are not currently known, the simulations created for consider a representative development of a certain mass and scale under Alternative 4. The following assumptions were used to define the visual components of the Proposed Action for this impact analysis:

- Based on the investment required by this project, it is assumed that project designs would represent the industry standard for design aesthetics and architectural quality.
- The proposed buildings are likely to be a combination of concrete, steel, composite architectural materials, and various types and colors of glass.
- Given the potential views that would be available from the proposed new buildings, it is likely that the buildings would utilize a substantial amount of glass and potentially provide balcony areas to take advantage of these views.
- It is anticipated that most of the proposed buildings would include architectural forms that are interesting and iconic and would not likely have flat roofs, or monotonous elevations or fenestration of building design elements.
- Building utilities, storage areas, delivery locations, and other functional elements of a complex of buildings are assumed to be appropriately screened and enclosed.
- Parking structures are assumed to include some level of architectural design and screening. Concrete only materials are not assumed in the simulation modeling. Views into the proposed structure are assumed to not be available as a basic assumption and design condition of approval. All parking structure shall provide vertical screening including metal mesh, perforated metal or welded wire with vine plantings, or using concrete brows to limit the visibility into the operating portions of the structure and to avoid directly viewing hanging lights and utility conduits and piping.

The Landscape Assessment Units around the site to the south, west, and north have an overall existing lower visual quality than Landscape Assessment Units to the east (see EIS Appendix F, Section 1.3 for a detailed description of how Landscape Assessment Units were identified and ranked). Therefore, the contrast with the quality of the adjacent areas would not create a high contrast of visual quality to these areas. Therefore, Alternative 4 would be expected to have a positive impact on the existing aesthetics of these adjacent areas and on the overall visual environment for this part of the study area**.** However, the Landscape Assessment Units around the site to the northeast, east, and southeast do have a higher existing visual quality, and Alternative 4 would slightly lower the visual quality of these areas.

Due to the older nature of the existing buildings and large areas of surface parking on OTC, the existing visual quality of the site would be improved by the architectural, site planning, and landscape architectural treatments developed under Alternative 4. Additional detail is provided in the responses to the City of San Diego significance determination criteria below.

SD-e. Would Alternative 4 exceed the allowable height or bulk regulations and the height and bulk of the existing patterns of development in the vicinity of the project by a substantial margin? and

SD-h. Is the project located in a highly visible area and would it strongly contrast with the surrounding development through excessive height, bulk, signage, or architectural projections?

OTC is federal property and as such is not under regulatory control by the City of San Diego. However, OTC is in a highly visible area of the subregion, including Interstate 5 and Interstate 8, dozens of public roads, parks, state historic parks and thousands of private properties. The adjacent hillsides also create a larger than normal viewshed. The development proposed under Alternative 4 would highly contrast with the adjacent height and bulk patterns of the area, whether to the north, west, south, or east. This contrast would be very high considering the average height of the adjacent community area is 10-30 feet in height, with the proposed project buildings consisting of 35 high-rise buildings (350 feet tall) and 51 mid-rise buildings (240 feet tall) resulting in a more than 10-time multiplier in heights. The massing of the buildings would be 20 to 40 times larger than the massing of adjacent buildings.

Table 2.3-4 presents the degree of change to visual quality that would occur under Alternative 4 as viewed from the 10 KOPs selected around OTC. Simulations from each KOP are provided in EIS Appendix F, Attachment B.

Table 2.3-4 Summary of Alternative 4 Visual Quality Impacts

Key Observation Point	***Existing Average Quality(1)***	***Resulting Predicted Visual Quality(1)***	***Degree of Visual Quality Change***
KOP 1 (IN-1): Interstate 5 Southbound	Moderate	High	Moderately Improved Quality
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderately Low	Moderately High	Major Quality Improvement
KOP 3 (NM-2): Sports Arena & Rosecrans North Midway Sub-Area	Low	Moderately Low	Slightly Improved Quality
KOP 4 (CM-2): Midway Drive & OTC Site 2 in Central Midway Sub-Area	Low	Moderately High	Major Quality Improvement

Key Observation Point	*Existing Average Quality*[(1)]	*Resulting Predicted Visual Quality*[(1)]	*Degree of Visual Quality Change*
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	Moderately High	Moderately High	No Change
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	Moderately High	Low	Major Lowered Quality
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	Moderately High	Moderate	Slightly Lowered Quality
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 9 (NP-3): Altamirano & Presidio Drive in North Mission Hills Sub-Area	High	Moderately Low	Major Lowered Quality
KOP 10 (CH-2): Hayden & Linwood in Central Mission Hills Sub-Area	High	Moderate	Moderately Lowered Quality

Note: (1) Categories for Visual Quality Using an Average of Vividness, Unity, and Intactness Rankings. Existing Average Quality Values: Low; Moderately Low; Moderate; Moderately High; High. Resulting Predicted Visual Quality Values: Low; Moderately Low; Moderate; Moderately High; High. Moderately high and high impacts are considered a significant impact. Degree of change values: Major Quality Improvement (Improved 3 or more levels); Moderately Improved Quality (Improved 2 levels); Slightly Improved Quality (Improved 1 level); No Change; Slightly Lowered Quality (Degraded 1 level); Moderately Lowered Quality (Degraded 2 levels); Major Lowered Quality (Degraded 3 or more levels).

SD-f. Would Alternative 4 have an architectural style or use building materials in stark contrast to adjacent development where the adjacent development follows a single or common architectural theme? and

SD-n. Would Alternative 4 create a disorganized appearance and would this appearance substantially conflict with City codes enforced in the nearby areas around the site? and

SD-o. Would Alternative 4 significantly conflict with the height, bulk, or coverage regulations of the zone and does not provide architectural interest? and

SD-q. Would Alternative 4 development be large and would result in an exceeding monotonous visual environment (e.g., a large subdivision in which all the units are virtually identical)?

If Alternative 4 is selected by the Navy for implementation, the public-private developer would undergo detailed site planning, including a review of design concepts. Thus, the development under Alternative 4 may have a consistent style of buildings, although it is likely to include some variation in the architectural forms within the development to avoid a monotonous appearance. The materials would be modern, such as concrete, steel, metal, glass, and stucco. The adjacent building architectural styles, materials, and character differ widely and there is no pattern of consistency. Therefore, Alternative 4 would not present a stark contrast to an existing common architectural theme.

Alternative 4 would create a consistent and modern building design and overall site planning would result in an improvement to OTC, although in high contrast with its setting.

SD-i. Would the project have a cumulative effect by opening up a new area for development or changing the overall character of the area?

The development on OTC under Alternative 4 would be contained within the boundaries if OTC Site 1 and OTC Site 2, but the mixed-use development does have the potential to encourage or entice new development in the area. This would be the result of land value increases, improved economic conditions, and increased public infrastructure resulting from the proposed development under Alternative 4. As described above, OTC is federally owned and is not under regulatory control by the City of San Diego. However, adjacent land is regulated by zoning, policies, plans, and restrictions placed on them by the City of San Diego to prevent major changes to the character of the area. The Midway-Pacific Highway Community Plan (City of San Diego, 2019d) guides development for the immediate area surrounding OTC, and the plan includes a vision that increases the residential population in the area and creates cohesive districts within overall community planning area. Mixed-use development was proposed for the “Dutch Flats” district where OTC is located, albeit the proposed develop does exceed the density envisioned under the community plan. The visual character of the proposed development under Alternative 4 would be consistent with types of future development encouraged by the Midway-Pacific Highway Community Plan. Additional analysis related to potential growth inducement are addressed under Section 2.5 of this appendix.

SD-p. Would the project include a crib wall or retaining wall, or noise walls greater than 6 feet in height and 50 feet in length with minimal landscape screening or berming where the walls would be visible to the public?

It is likely that some details of Alternative 4 would include major wall structures that would have visibility to the public in public viewing locations. Although the project does not have enough detail associated with it to make a firm determination, it is likely that walls supporting parking structures or hiding parking or other utilitarian structures would be part of the project.

Mitigation Measures and Residual Impacts

In order to minimize potentially significant impacts to aesthetics, and neighborhood/community character, the following considerations would be applied during site-specific planning and design:

- **VIS-6. Conceal or Integrate Parking Garages.** Looking from the west side of OTC Site 2 or from many parts of OTC Site 1, the presence of parking structures would not be that significant of a visual quality issue. This assumes that parking structures do not allow for large openings in the elevations that allow a person to see parked cars and hanging lights and utility piping. A lower parapet style wall to conceal parked cars and a brow from the upper floor are both essential to limit visual penetration into the structure and vehicle light and parking garage lighting to spill out. The exterior materials must be made to relate to the adjacent building elevations and materials. The use of a vertical perforated screens or patterned laser cut metal panels or offsetting planes that allow air and light in, but that obscure clear views in would be essential. Design treatments on the east facing edge of the complex must receive even more integration with the architecture. A potential 30-foot-high elevated plaza with parking under the plaza would be an appropriate solution to partially exposed parking structures that are shown on the mass models used in this study (see Simulation 1 for all alternatives where the parking structures are clearly different than the rest of the architecture in Appendix F, Attachment B). The modeling shown in this study does have the appropriate minimal gap for each floor of the garage. However, the material changes between the lower portion of the building with parking and the rest of the building should be less noticeable.

- **VIS-7. Maintain Horizontal Banding and Fenestration on Buildings.** It is common for architecture to portray dynamic vertical elements to accentuate the overall scale and iconic power of the building. However, the overall structure of tall buildings is already strongly vertical. Horizontal banding and fenestration that sets each floor as a horizontal design element helps to reduce the apparent size of the building.
- **VIS-8. Integrate and Connect a Series of Plazas, Streets and Spaces.** A strong foundation of an elevated or terraced set of open-air spaces at the ground levels of buildings would be important to make the project feel as though it is a campus-like setting instead of a series of buildings and streets like many downtown areas. The park and recreation requirements and pedestrian circulation needs of the project should require a substantial amount of the ground-plane to be landscaped and contain pedestrian-scaled spaces. A potential 30-foot-high elevated plaza structure would go a long way to create this integrated and connected public space. This space would also help in creating and maintaining some of the view corridors across the site.

With these measures implemented, the impacts would be minimized, but would still remain significant and unavoidable.

AES-d: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially significant impact. Alternative 4 would likely create conditions that would cause light and glare impacts, but these cannot be fully analyzed until site design and detail is available. However, based on the scale of the proposed development under Alternative 4, including the height, size, and position of buildings and their lighting needs, potential building materials (e.g., glass, steel), and types of uses (e.g., hotels that require nighttime lighting), impacts would be presumed to occur. Additional detail is provided in the responses to the City of San Diego significance determination criteria below.

SD-s. Would Alternative 4 be moderate to large in scale, more than 50 percent of any single elevation of a building's exterior is built with a material with a light reflectivity greater than 30 percent (see Land Development Code Section 142.07330(a)), and the project is adjacent to a major public roadway or public area?

While the specific details for the site layout and building design are not currently known, the proposed development under Alternative 4 would be large in scale and would likely include exteriors with reflective materials such as glass and metal. The project is adjacent to Interstate 5 and Interstate 8 along with numerous public roadways.

SD-t. The project would shed substantial light onto adjacent, light-sensitive property or land use, or would emit a substantial amount of ambient light into the nighttime sky.

The proposed development under Alternative 4 includes mid to high-rise buildings and may include signage or reflective building materials (e.g., glass, metal) that could reflect into areas that are highly visible to off-site glare-sensitive uses. Uses considered to be light-sensitive to nighttime light or glare-sensitive to daytime reflected solar light, include residential, some commercial, and natural areas. They are recognized as light-sensitive because they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. They are recognized as glare-sensitive because they are typically occupied by persons who have expectations for a comfortable exterior use on their own property that may be affected by high levels of glare. Land uses adjacent to OTC that would be sensitive to light and glare are presented in Section 3.3.3, Affected Environment, of the EIS in Figure 3.3-8.

Without detailed analysis of photometrics, light sources, and light systems being available at this stage of the project, determining the level of impact at this time is to be difficult. Thus, it assumed the proposed development under Alternative 4 would exceed the 2.0-foot candle spill over light threshold at the at the property line, per the measurement procedures outlined by the Illuminating Engineering Society of North America.

Mitigation Measures and Residual Impacts

In order to minimize potentially significant impacts related to light and glare, the following considerations would be applied during site-specific planning and design:

- **VIS-9. Exterior lighting would be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections would be confined, to the maximum extent feasible, within the boundaries of OTC.** Exterior lighting would be directed downward and away from adjacent properties and public rights-of-way. Shielded means that the light rays would be directed onto OTC and the light source, whether bulb or tube, would not be visible from an adjacent property. All parking and security lighting would consist of full cutoff fixtures unless a different cutoff classification is specifically authorized through the architectural review process.
- **VIS-10. Obtrusive light would be minimized by limiting outdoor lighting that is misdirected, excessive, or unnecessary, and light required for the development would be directed downward to minimize spill over onto adjacent properties and reduce vertical glare or up-lighting.**
- **VIS-11. The project would be required to meet the lighting standards contained in the CALGreen Code for green building standards.** This code is issued by the Building Standard Commission of the California Department of General Services. The project would comply with standards contained in the CALGreen Code for reducing light pollution.
- **VIS-12. The lighting plan would need to be consistent with the U.S. Green Building Council's LEED Green Building Rating System requirement**s. The project would need to achieve at least the U.S. Green Building Council's LEED v4 Silver certification. Consistency with LEED requirements would reduce both the generation of exterior light and the potential for light trespass to affect off-site areas.
- **VIS-13. Light-emitting diode light fixtures would be considered for all interior and exterior lighting and fixtures and would be selected based on architectural aesthetic, efficiency, maintenance, and glare control.**
- **VIS-14. Professionally recommended lighting levels should be determined for each activity areas to prevent over-lighting and reduce electricity consumption.**
- **VIS-15. Shielded fixtures with efficient light bulbs would be used in the parking lot to prevent any glare and light spillage beyond the property line.** Shielded fixtures would also help in preventing light pollution of the dark sky.

- **VIS-16. To protect spill over on Interstate 5 and the Pacific Highway, luminaries would be shielded, reduced in intensity, or otherwise protected from view**, such that the brightness of a light source within 10 degrees from a driver's normal line of sight would not be more than 1,000 times the minimum measured brightness in the driver's field of view, except when minimum values are less than 10 foot-lambert. If minimum values are below 10 foot-lambert, the source brightness would not exceed 500 foot-lambert plus 100 times the angle, in degrees, between the driver's line of sight and the light source.
- **VIS-17. The maximum measurable luminance of the illuminated building façade would not exceed 40 candela per square meter.** Additionally, an area weighted average of field measurements would not exceed 10 candela per square meter for any single contiguous façade area greater than 7,500 square feet in area.
- **VIS-18. Glass used in building façades would be anti-reflective or treated with an anti-reflective coating in order to minimize glare.**
- **VIS-19. The following treatments would be avoided as part of the Proposed Action materials:**
    - Reflective glass that exceeds 50 percent of any building surface and none on the bottom three floors
    - Mirrored glass
    - Black glass that exceeds 25 percent of any surface of a building
    - Metal building materials that exceed 50 percent of any street facing surface
    - Exposed concrete that exceeds 50 percent of any building

  The following use of building materials would be encouraged:

    - Natural stone
    - Galvanized metal
    - Matte or low gloss painted materials including steel, metal, and wood
    - Precast concrete panels with low reflectivity
    - Clear or lightly tinted glass
    - Brushed stainless steel versus polished stainless steel
    - Anodized aluminum
    - Composite panels that are not pure or bright white

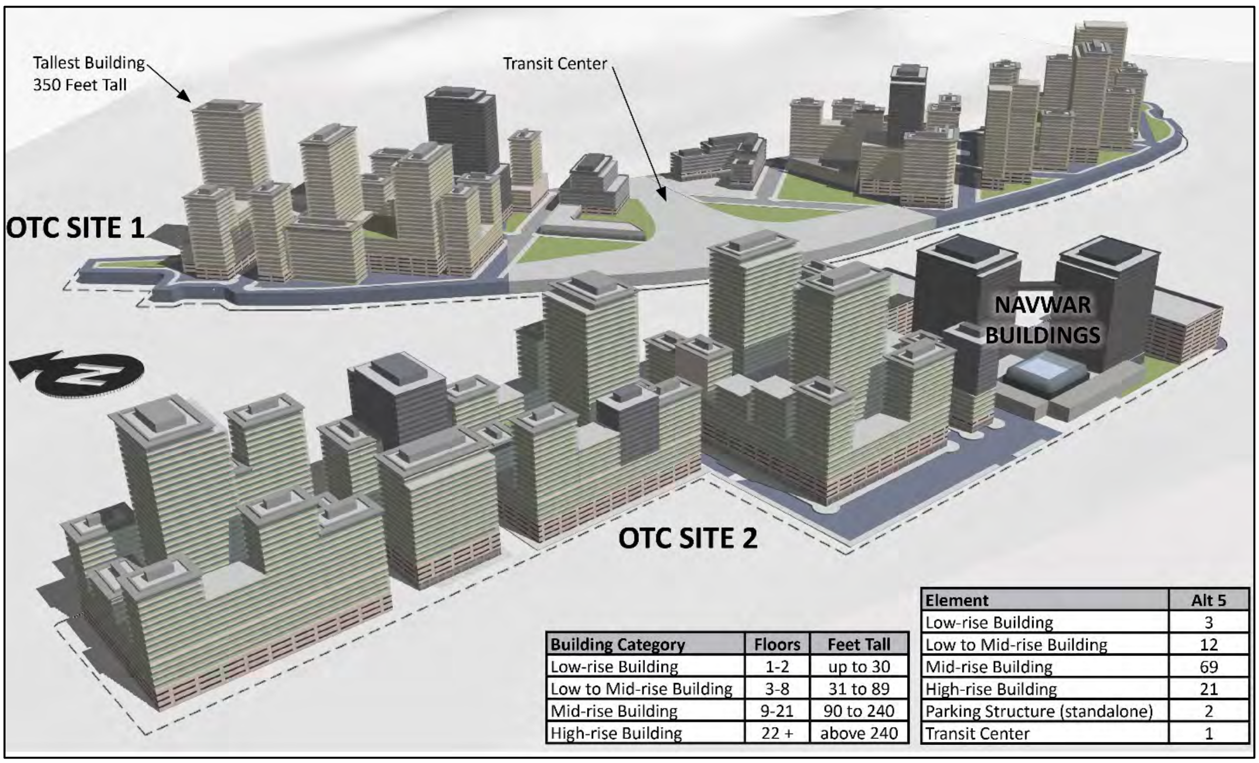
With these measures implemented, the impacts would be minimized, but would still remain significant and unavoidable.

2.3.1.4 Alternative 5 Impacts

The proposed development under Alternative 5 includes buildings up to 350 feet tall. Figure 2.3-2 represents a three-dimensional model of massing that would accommodate the needs of this alternative. This diagram is not intended to show an actual architectural design nor to commit to any massing arrangement of these buildings This diagram is not intended to show an actual architectural design nor to commit to any massing arrangement of these buildings other than indicating the general height, number of floors, and parking structures needed to represent the programmatic requirements of the alternatives. The model does show the major physical elements that would be likely to have a high level of visual prominence. The table in Figure 2.3-2 provides a summary of the major physical features of the alternative including floors, heights, and number of total buildings being considered. Simulations of the proposed development under Alternative 5 in the context of the existing visual setting from KOPs selected from within a 1-mile radius of OTC are presented in the EIS Appendix F, Attachment B.

The NAVWAR facilities would be the same as described under Alternative 4. The major difference between Alternative 4 and 5 is that Alternative 4 would have 35 high-rise buildings (350 feet tall) and 51 mid-rise buildings (240 feet tall) whereas Alternative 5 would have 21 high-rise buildings (350 feet tall) and 69 mid-rise buildings (240 feet tall).

Impacts under Alternative 5 would be similar to but slightly less than those described for Alternative 4, as the development density is slightly reduced. Differences would be most pronounced in relation to potential view blockage, due to differences in the massing and positions of the buildings on OTC Site 1 and OTC Site 2. Table 2.3-5 identifies 10 sub-regionally important viewing scenes that have the potential to be blocked by the proposed development on OTC under Alternative 5. Alternative 5 would potentially block from 21 percent to 65 percent of the total views, with special concern for affected views of San Diego Bay, Coronado, Mission Bay, San Diego River, Cabrillo Point, and the Point Loma Hillside.



Building Category	Floors	Feet Tall
Low-rise Building	1-2	up to 30
Low to Mid-rise Building	3-8	31 to 89
Mid-rise Building	9-21	90 to 240
High-rise Building	22 +	above 240

Element	Alt 5
Low-rise Building	3
Low to Mid-rise Building	12
Mid-rise Building	69
High-rise Building	21
Parking Structure (standalone)	2
Transit Center	1

Figure 2.3-2 General Building Massing of Alternative 5

Table 2.3-5 Summary of Alternative 5 Viewing Scene Impacts

Viewing Scene[(1)]	*Percent of Area*	*Persons (based on 2016 pop.) within the Viewshed Limits*	*Persons (based on 2016 pop.) Likely to see the Site[(2)]*	*Persons (based on 2035 pop.) within the Viewshed Limits*	*Persons (based on 2035 pop.) Likely to see the Site [(2)]*
1. San Diego River	59.49%	3,876	2,306	3,776	2,246
2. Mission Bay	37.94%	3,876	1,470	3,776	1,433
3. Mission Valley North	65.36%	2,143	1,401	2,314	1,512
4. Presidio/Mission Hills	32.60%	11,560	3,768	13,852	4,515
5. Pacific Ocean West	25.44%	4,220	1,073	3,874	985
6. Pacific Ocean Southwest	36.15%	2,550	922	1,994	721
7. San Diego Bay/Coronado	38.05%	6,038	2,298	6,782	2,581
8. Cabrillo	24.68%	4,927	1,216	4,538	1,120
9. Pt Loma Hillside	46.01%	9,059	4,168	9,162	4,215
10. Downtown Skyline	21.28%	1,158	246	2,606	554
Average Percent of View Blocked[(1)]	38.70%	24,154[(3)]	9,347	25,528[(3)]	9,879

Legend: % = percent; Pop. = Population; SD = San Diego.

Notes: (1) Percent of view area affected is based upon a topographic model only and does not include buildings, structures.

(2) Persons affected were based on SANDAG Master Geographical Reference Areas estimates for 2016 and 2035. Calculations assumed even distribution across Master Geographical Reference Areas.

(3) Populations in the various viewing locations overlap. This number has taken out the double counting of persons.

Changes in view quality were further analyzed from 10 KOPs (refer to EIS Section 3.3.3, *Affected Environment*, for how these points were selected). A simulation of the proposed development was inserted into the photo from each KOP to analyze the degree of view blockage that would be anticipated at that location. Simulations showing views of the proposed development under Alternative 5 from all 10 KOPs are provided in EIS Appendix F, Attachment B. As shown below in Table 2.3-6, KOPs 2, 3, 4, 5, and 6 would experience less than significant (none to moderate adversity) view blockage under Alternative 5. Potentially significant impacts (moderately high and high adversity) would occur at KOPs 1, 7, 8, 9, and 10.

Table 2.3-6 Summary of Alternative 5 View Quality Impacts

Key Observation Point	*Viewing Blockage Expected[(1)]*	*Positioning of Blockage[(1)]*
KOP 1 (IN-1): Interstate 5 Southbound	Moderately High Adversity	Silhouette with the Sky
KOP 2 (PC-2): Pacific Coast Highway Northbound in South Midway Sub-Area	Moderate Adversity	Can See Over Some Buildings
KOP 3 (NM-2): Sports Arena & Rosecrans North Midway Sub-Area	None, Low or Moderately Low	Silhouette with the Sky
KOP 4 (CM-2): Midway Drive & OTC Site 2 in Central Midway Sub-Area	Moderate Adversity	Silhouette with the Sky
KOP 5 (SP-2): Trolley Station at Washington in South Midway Sub-Area	None, Low or Moderately Low	No Position Impact
KOP 6 (OT-1): Park at Old Town State Park in Old Town Sub-Area	None, Low or Moderately Low	No Position Impact

Key Observation Point	*Viewing Blockage Expected*(1)	*Positioning of Blockage*(1)
KOP 7 (OT-6): Old Town Avenue in Old Town Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 8 (NP-1): Presidio Park in North Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 9 (NP-3): Altamirano & Presidio Drive in North Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon
KOP 10 (CH-2): Hayden & Linwood in Central Mission Hills Sub-Area	High Adversity	Silhouette Against the Ocean Horizon

Note: (1) Impacts determined by Amount of View Blockage as well as the Position of the Blockage based on context. View Blockage Gradient: None, Low or Moderately Low; Moderate Adversity; Moderately High Adversity; High Adversity. Moderately high and high impacts are considered a significant impact. Position Blockage Gradient: No Position Impact; Can see over some buildings; Silhouettes with the sky; Silhouettes against the ocean horizon.

Mitigation Measures and Residual Impacts

In order to minimize potentially significant impacts to visual resources, the considerations described under Alternative 4, VIS-1 to VIS-19, would be applied during site-specific planning and design. With these measures implemented, the impacts would be minimized, but would still remain significant and unavoidable under significance criteria AES-a to AES-d.

In order to minimize potentially significant impacts to visual resources, the considerations described under Alternative 4, VIS-1 to VIS-19, would be applied during site-specific planning and design to this Alternative 5. With these measures implemented, the impacts would be minimized, but would still remain significant and unavoidable under significance criteria AES-1 to AES-4.

2.3.1 Temporary Construction Impacts

The scale of Alternative 4 and Alternative 5 are such that major construction will occur over a several year period and the scale of the contractor laydown areas, staging areas and construction areas will be large and likely highly visible. The demolition of other buildings will also last over several months of demolition activity. In addition, construction-related rigging, scaffolding, and construction cranes are also expected to be highly visible and will last over several year phasing of demolition and construction.

No contractor laydown area has been identified but it is assumed it will not be one primary area. Construction staging, storage and surge areas would be expected to be distributed throughout OTC Site 1 and OTC Site 2. All existing buildings that will be demolished, would likely have surge piles of demolished material sitting for several months.

Normally, major disturbances that contrast with the existing visual setting and character of the adjacent areas around OTC Site 1 and OTC Site 2 would be considered temporary. Construction on a typical tall building will likely last from 1-2 years per building and likely 5-10 years for a few phases of the project. Typically, any change to an area that remains under 5 years is considered to be temporary. Although the overall project phasing could take up to 20 years, individual phases are assumed to be less than 5 years.

Construction materials are commonly stored in a haphazard and cluttered manner. This analysis assumes that unless required, construction activities and areas are likely to create a negative aesthetic for different areas of OTC Site 1 and OTC Site 2. Given that many viewing locations around the site, are substantially higher than the project site, fencing and screening is not likely to resolve the visibility of these areas. Therefore, a temporary significant impact to visual quality, community character and aesthetics would be expected. This would apply equally to Alternative 4 and Alternative 5.

Mitigation Measures and Unavoidable Significant Impacts

The following measures would be used in order to address this temporary significant visual impact:

- VIS-20: All staging and storage areas that contain material that is left over night, shall utilize construction fencing with green fabric screening. Care will be provided to make sure that these storage areas are reasonably organized to avoid a haphazard and chaotic appearance.
- VIS-21: Storage of demolished materials that are not intended to be recycled, will be removed from the site and disposed of properly on a weekly basis. Materials that are being recycled should be processed and removed or re-incorporated into the project within a 6-month period.
- VIS 22: Dust control, litter control and flat surface areas will be cleaned on a weekly basis.

If measures VIS-20 to -22 are executed on the project site, then the significant temporary impacts are considered to be lowered to less than significant for visual, community character and aesthetic impacts.

2.3.2 Cumulative Impacts

2.3.2.1 Description of Geographic Study Area

The AVE for evaluating cumulative impacts on visual resources is defined as the project area and adjacent communities (i.e., the Midway-Pacific Highway, Old Town, and Uptown communities).

2.3.2.2 Relevant Past, Present, and Future Actions

Table 4.3-2 of the EIS lists the reasonably foreseeable cumulative actions that might interact with the affected resource areas of the action alternatives and cumulatively affect visual resources within the AVE. The projects include military and non-military construction and development projects. The identified cumulative military projects at OTC and Marine Corps Recruit Depot San Diego would all be consistent with the existing visual environment, and therefore are not considered in this analysis.

Management plans such as the San Diego General Plan, the community plans, and regional transportation plans/programs all have the potential to affect the visual environment. Proposed and reasonably foreseeable construction projects, such as the expansion of the San Diego International Airport, improvements to Port of San Diego lands, the Sports Arena redevelopment, The Post project, and other large development projects (e.g., Riverwalk and University of California San Diego Long Range Development Plan) would alter the visual environment in their vicinities.

As detailed in the Midway-Pacific Highway Community Plan and further demonstrated by several of the identified cumulative projects, the Midway-Pacific Highway area is poised for major redevelopment in the coming years. Collectively, these and other projects have the potential to alter the existing visual environment of the area, irrespective of the Proposed Action Alternatives considered in this EIS.

The Midway-Pacific Highway Community Plan encourages buildings and streetscape improvements that would enhance the visual character along Pacific Highway. New buildings would incorporate modulations, articulations, stepbacks, and different transparencies, and use contemporary and high-quality materials with varying colors and textures to create visual appeal. The Community Plan also notes that complementary mobility and infrastructure improvements within and near the larger parcels, would improve the community's visual character (City of San Diego, 2018).

2.3.2.3 Cumulative Impact Analysis

As described above, Alternatives 4 or 5 would result in potentially significant impacts to visual resources. Even with minimization measures VIS-1 to VIS-19 implemented to minimize potential visual impacts, the impacts would not be reduced to a less than significant level.

Due to the heights of the proposed buildings (350 feet), implementation of Alternative 4 or 5 would have the potential to partially obscure some views of the annual Independence Day Big Bay Boom Fireworks Display (Project #26) in San Diego Bay from lower elevation viewers east of OTC in the Mission Hills area. The Big Bay Boom show uses predominantly 8- and 10-inch diameter firework shells (Port of San Diego, 2019). These shells send the firework a corresponding height of approximately 800 feet and 1,000 feet, respectively (Pyrotechnic Innovations, 2020). Despite the fact that fireworks display would be much higher than the proposed buildings, other better viewing areas being available, and the potential area of occlusion would be small and decrease with increasing elevation, there would be a localized, minor, and partial visual disruption and associated impact to some lower elevation viewers located in North Mission Hills.

The cumulative projects in the geographic extent, such as the Sports Arena redevelopment, The Post urban office complex, the San Diego International Airport Terminal 1 expansion, and the large commercial development projects would be developed consistent with the existing visual environment in their immediate vicinity – or increase the overall visual appeal in accordance with the measures identified in the Midway-Pacific Highway Community Plan. The identified cumulative projects would also be consistent with the existing visual environment as they would comply with current height restrictions and/or would be consistent with the approved planning documents pertaining to visual appeal, unless otherwise exempt. Therefore, implementation of Alternatives 4 or 5 when combined with the past, present, and reasonably foreseeable future projects would result in potentially significant cumulative impacts to visual resources within the AVE.

2.4 Land Use/Planning, Recreation, and Agriculture and Forestry Resources

Land use is a foundational element of local city and county planning processes and is utilized to identify important community issues, project future demand for services, anticipate potential conflicts, and establish goals and policies for directing and managing growth. Local governments utilize a variety of tools in the planning process including regional plans, general plans, specific plans, zoning, and ordinances.

Descriptions of the regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.4.1, 3.4.2, and 3.4.3 of the EIS, respectively.

2.4.1 Impacts Determination

Impacts resulting from land use are determined by applying significance criteria to the potential change in land use that result from the alternatives.

2.4.1.1 Impacts Summary

Table 2.4-1 presents a summary of impacts related to land use/planning, recreation and agriculture and forestry for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.4-1 Impacts Related to Land Use/Planning, Recreation, and Agriculture and Forestry Resources

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
II. AGRICULTURE AND FORESTRY RESOURCES (AG-) Would the project:	-	-	-	-
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	-	-	-	**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	-	-	-	**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	-	-	-	**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?	-	-	-	**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	-	-	-	**X**
XI. LAND USE AND PLANNING (LU-) Would the project:	-	-	-	-
a) Physically divide an established community?	-	-	**X**	-
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	**X**	-	-	-
XVI. RECREATION (REC-) Would the project:	-	-	-	-
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	-	-	**X**	-
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	-	-	**X**	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

Approach for the Determination of Significance

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the CARB.

2.4.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for land use, planning, and recreation are described in Section 3.4.3.1 of the EIS, *Land Use*. There are no agriculture or forestry resources in the project area, so these topics are not addressed in the EIS. The No Action Alternative represents a continuation of existing land uses. Therefore, the No Action Alternative would result in less than significant impacts to land use, planning, recreation, and agriculture or forestry resources.

2.4.1.3 Alternative 4 Impacts

LU-a: Physically divide an established community?

Construction and Operations

Less than significant impact. Based on the existing land uses and physical configuration of OTC Site 1 and OTC Site 2 as shown in Figure 3.4-1 in the EIS, the building demolition, construction, and post-construction operations would not physically divide the Midway-Pacific Highway community beyond existing conditions. The configuration and placement of Interstate 5, existing rail lines, Pacific Highway, Sports Arena Boulevard, Barnett Avenue, and Midway Drive are the primary elements dividing the Midway-Pacific Highway community within the vicinity of OTC (see Figure 3.4-1 in the EIS). Interstate 5 and the rail lines also divide the Midway-Pacific Highway community from the Old Town community. Therefore, Alternative 4 would not divide the established community, and could potentially improve community connectivity by reducing the area on OTC required to meet Navy physical security requirements. Changes to the secure fenceline and controlled entry points surrounding the NAVWAR facilities on OTC could provide opportunities to connect Sports Arena Boulevard and Midway Drive. Integration of a transit center as part of Alternative 4 would not result in a change to the existing transit connectivity to the trolley and COASTER routes, as the existing functions of the Old Town Trolley Center would be consolidated on OTC.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

LU-b: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction and Operations

Significant impact. Overall, Alternative 4 is consistent with planning concepts identified in local, regional, and federal planning documents, but would exceed the development density and growth targets specified in the Midway-Pacific Highway Community Plan. Details are provided below with a conclusion that identifies how these differences were evaluated.

Table 2.4-2 presents the planned growth from the Midway-Pacific Highway Community Plan for household population, employment, residence (in dwelling units), nonresidential square feet, and population-based parkland compared Alternatives 4 and 5.

Table 2.4-2 Comparison of the Midway-Pacific Highway Community Plan Growth to Alternatives 4 and 5

Growth Area	***Community Plan-Existing (2015)***	***Community Plan-Planned Growth # (%)***	***Community Plan-Future (2045)***	***Alternative 4 # (% Planned Growth #)***	***Alternative 5 # (% Planned Growth #)***
Household Population	4,600	23,660 (514%)	28,260	14,364 (61%)	11,491 (49%)
Employment (Jobs)	15,200	4,370 (29%)	19,570	5,623 (129%)	3,823 (87%)
Residential (Dwelling Units)	1,935	10,155 (525%)	12,090	7,980 (79%)	6,384 (63%)
Nonresidential (SF)	9,800,000	300,000 (3.1%)	10,100,000	1,890,000 (630%)	1,340,000 (447%)
Parkland Inventory	***Community Plan-Existing (2015)***	***Community Plan-Planned Growth # (%)***	***Community Plan-Future (2045)***	***Alternative 4 # (% Planned Growth #)***	***Alternative 5 # (% Planned Growth #)***
Planned Parks	0	9.8	9.8	13.65	13.00
Park Equivalencies	0	13.51	13.51	4.35	5.50
Joint-Use Areas	0	1.5	1.5	0	0
Portion of Resource-based Park	0	3.3	3.3	0	0
Planned Recreation Center	0	1.75	1.75	0	0
Total Parkland	0	29.86	29.86	18.00	18.50
Population-based Park Requirement (2.8 acres / 1,000 population)	12.88	66.25	79.13	40.22	32.17
Parkland Surplus (Deficit)	(12.88)	(36.39)	(49.27)	(22.22)	(13.67)
Percentage of Requirement	0%	45%	38%	45%	56%

Legend: % = percent; SF = square feet.

Alternative 4 proposes 10,000 (7,980 occupied) dwelling units which is an additional 79 percent of growth compared to what is planned in the Community Plan. The floor to area ratio associated with the residential development is about 12.4 (similar to downtown San Diego), which is significantly higher than the approximate 2.0 that is stated in the Community Plan. The community plan was based on the 30-foot Coastal Height Limit Overlay Zone. However, since the community plans publication, Measure E was passed to end the 30-foot height limit for new buildings in the Midway District. Midway-Pacific Highway community planners are considering an update to the community plan in light of the potential mixed-use development on OTC and the elimination of the 30-foot height limit. This would likely include increased densities in the community plan for mixed-use development.

Alternative 4 proposes an increase of 14,364 to the household population which is an additional 61 percent of growth compared to what is in the Community Plan. This results in an additional 40.22 acres of population-based parkland of which the Alternative provides 18.00 acres, leaving a deficit of 22.22 acres. While Alternative 4 does not meet the full parkland requirement, it does provide 45 percent, which is similar to the 38 percent ratio provided in the Community Plan. New developments are required to either provide the required parkland commensurate with any increase in residents as part of their project or contribute to acquisition and development of parkland elsewhere within the community. While exact development details are not known at this time, it is anticipated that development could meet parkland requirements through a combination of on-site parks and contribution to acquisition and development of parkland elsewhere within the community.

Alternative 4 proposes land uses that would generate an additional 5,623 jobs which is an additional 129 percent of the growth contained in the Community Plan. While this is a significant addition, the proximity of OTC to the existing Old Town Transit Center, the projected growth in contractor support identified by NAVWAR, and the incorporation of residential makes this consistent with the regional planning policies and strategies and the transit-oriented development zone, but inconsistent with the Community Plan.

Alternative 4 proposes 1,890,000 square feet of nonresidential land uses (mainly office), which is 630 percent of the planned growth (300,000 square feet) in the Community Plan. While this degree of nonresidential growth is inconsistent with the Community Plan it is consistent with the regional planning policies and strategies and the transit-oriented development zone.

Alternative 4 is consistent with the military and regional plans. While Alternative 4 is consistent with the mix of land uses and transit-oriented development goals in the Midway-Pacific Highway Community Plan, the higher density of use is inconsistent with that allowed by the 30-foot Coastal Height Limit Overlay Zone that controls the non-federal land within the Community Plan. The increased density supported by the alternative development process described in Section 2.2, contributes to significant additional proposed growth in dwelling units, population, jobs, and nonresidential uses over the targets contained in the Community Plan. The inconsistency with the Community Plan land use densities would result in a significant impact relative to planned land use within the Midway-Pacific Highway Community Plan, although that plan may be updated in the future in light of the Navy's proposed mixed-use development and the removal of the 30-foot height limit in this area.

Mitigation Measures and Residual Impacts

Significant impacts would occur for this criterion, but no mitigation measures have been identified. Therefore, residual impacts are the same as the impacts described above.

REC-a: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction

Less than significant impact. No permanent population increase that might increase the use of park facilities is anticipated during construction.

Operations

Less than significant impact. The increase in population associated with Alternative 4 would increase the use of existing neighborhood and regional parks or other recreational facilities. However, the Proposed Action would include open space areas that new population would likely, due to proximity, utilize as a first option for common activities such as exercise and dog-walking. The Proposed Action would likely also require the development to meet parkland requirements through a combination of on-site parks and contribution to acquisition and development of parkland elsewhere within the community. It is also likely that non-project-related population near the proposed development would utilize project-related open space and reduce their use of other public recreational facilities.

Mitigation Measures and Residual Impacts

While substantial physical deterioration of recreational facilities is not anticipated under Alternative 4, design elements included in project-related open space could consider including picnic/barbeque and other amenities that would further reduce use of other public facilities.

REC-b: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Construction and Operations

Less than significant impact. The additional residents would increase the population-based park requirements for the community by another 40.22 acres under Alternative 4, 18.00 acres of which would be provided at OTC. This is based on the City's General Plan using the city's ratio of 2.8 acres of parkland for every 1,000 residents. The portion of parkland to be provided at OTC would be within the project footprint and would not have an adverse physical effect on the environment. The portion of parkland to be provided outside the OTC project footprint is currently unknown. Any new parkland developed would undergo the appropriate level of NEPA and/or CEQA analysis. In addition, the Navy and developers would work with the City of San Diego during the development process to meet the parks requirement. Therefore, it is assumed that additional recreational facilities developed outside the OTC project footprint as a result of the city's parkland planning factor would not have an adverse physical effect on the environment.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

AG-a: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?

AG-b: Conflict with existing zoning for agricultural use, or a Williamson Act contract?

AG-c: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

AG-d: Result in the loss of forest land or conversion of forest land to non-forest use?

AG-e: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest?

The preceding significance criteria are for agriculture and forestry resources. These resources do not occur in the project area or in the ROI. Therefore, no analysis is presented for criteria AG-a through AG-e, as there would be no impact to agriculture or forestry resources.

2.4.1.4 Alternative 5 Impacts

Construction and Operations

Less than significant impact. Alternative 5 would have the same impacts to physically dividing the community (LU-a) as described for Alternative 4. Alternative 5 would have similar impacts to Alternative 4 for conflicts with any land use plan, policy, or regulation (LU-b). The two alternatives are similar concepts, but the magnitude of proposed growth for Alternative 5 would be less (lower density development) than for Alternative 4 (higher density development). The dwelling unit component of Alternative 5 would represent an additional 63 percent of growth within the Midway-Pacific Highway Community Plan (see Table 2.4-2). The household population associated with Alternative 5 represents an additional 49 percent of growth within the Community Plan. This would increase the population-based park requirements by an additional 32.17 acres, of which 18.50 would be provided within the development. The anticipated jobs within Alternative 5 is 3,823 jobs, representing an additional 87 percent of new jobs anticipated within the Community Plan. The nonresidential square footage of Alternative 5 is 1,340,000 square feet which is representing an additional 447 percent of the planned 300,000 square feet in the Community Plan.

Significant impacts would occur for the LU-b criterion, but no mitigation measures have been identified. Therefore, residual impacts are the same as the impacts described above.

Agriculture and forestry resources do not occur in the project area or in the ROI. Therefore, no analysis is required for criteria AG-a through AG-e, as there would be no impact to agriculture or forestry resources.

2.4.2 Cumulative Impacts

2.4.2.1 Land Use

Description of Geographic Study Area

For Alternatives 4 and 5, the ROI consists of the Midway-Pacific Highway, Old Town, and Uptown community planning areas. The ROI also considers the land use potentially affected by the regional plans presented in EIS Table 4.3-1. There are no agricultural resources within the ROI.

Relevant Past, Present, and Future Actions

EIS Table 4.3-2 lists the reasonably foreseeable cumulative actions that might cumulatively affect land use within the ROI. The projects include construction and development projects. The identified military projects at OTC and Marine Corps Recruit Depot San Diego would all be consistent with existing land uses at their respective installations, and therefore are not considered in this analysis.

Management plans such as the San Diego General Plan, the community plans, or regional plans all have the potential to shift land use over time. Proposed and reasonably foreseeable projects, such as the expansion of the San Diego International Airport, the new Central Mobility Hub, improvements to Port of San Diego lands, the redevelopment of the Sports Arena, The Post project, and other large development projects (e.g., Riverwalk and University of California San Diego Long Range Development Plan) could also alter land uses in their vicinities.

As detailed in the Midway-Pacific Highway Community Plan and further demonstrated by several of the identified cumulative projects, the Midway-Pacific Highway area is poised for major redevelopment in the coming years. Collectively, these and other projects have the potential to alter the existing landscape of the area, irrespective of the Proposed Action Alternatives considered in this EIS. The following impacts discussion evaluates the potential for synergistic, or interactive impacts of the Proposed Action Alternatives and in particular, the larger cumulative projects and community plans.

Alternatives 4 and 5

Implementation of Alternatives 4 and 5 would be consistent with the types of current and future land use identified in the Midway-Pacific Highway, Old Town, and Uptown Community Plans, and other military, local, regional, and federal planning documents. Potential land use changes would be consistent with the broader planning goals and concepts within the San Diego General Plan, the goals of the Community Plans, and the identified cumulative projects. These goals and concepts include supporting critical housing needs, fostering the development of sustainable communities, and the development of residential and employment uses in proximity to transit.

The Midway-Pacific Highway Community Plan identifies OTC as Military Use as exclusive military use on the federal/Navy-owned property. The areas adjacent to OTC area planned as mixed-use with varying residential densities to complement the ongoing military use of the site. Other actions in the geographic extent, such as the Sports Arena redevelopment, the Post urban office complex, the San Diego International Airport Terminal 1 expansion, and the large commercial development projects would contribute to the level of potential future development contemplated by local plans.

Alternatives 4 and 5 would also provide additional improvements for the transportation efficiency objectives due to location of a transit center at the OTC location. This would improve local and regional transportation efficiency and would also create a transit efficiency solution for traffic to and from San Diego International Airport.

When combined with the cumulative projects, Alternatives 4 and 5 would also be consistent with the identified City of San Diego, Port of San Diego, San Diego International Airport, and SANDAG plans and programs, specifically providing support to the goals associated with transportation efficiency, air quality improvements, promotion of a healthy environment, strengthening of the economy, supporting thriving communities, proximity to transit, increasing the amount of available parkland, and application of a multimodal approach to improving circulation and access throughout the community. However, while the future plans, projects, and programs have the potential to be complementary and collectively beneficial to land use over time, due in large part to the major redevelopment and transportation projects proposed in the region and in combination with Alternatives 4 and 5, the overall land use changes and recreation goal shortfalls would represent a substantial deviation from existing conditions and future goals as outlined in current community plans. Therefore, when added to the impacts from the identified cumulative projects, there would be significant cumulative impacts on land use from implementation of Alternatives 4 or 5.

2.5 Population/Housing

The EIS Socioeconomics section discusses data related to population and demographics, employment and income, housing, economic activity, and government revenue to provide key insights into the socioeconomic conditions that might be affected by the proposed actions and provides results of impact analysis.

A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.5.1, 3.5.2, and 3.5.3 of the EIS, respectively.

2.5.1 Impacts Determination

2.5.1.1 Impacts Summary

Table 2.5-1 presents a summary of impacts related to population/housing for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.5-1 Impacts Related to Population/Housing

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
XIV. POPULATION AND HOUSING (POP-) Would the project:	-	-	-	-
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	-	-	**X**	-
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	-	-	**X**	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.5.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for population and housing are described in Section 3.5.3.1 of the EIS, *Socioeconomics*. The No Action Alternative would result in less than significant impacts to population and housing.

2.5.1.3 Alternative 4 Impacts

POP-a: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

Less than significant impact. The construction industry of San Diego County, with approximately 92,000 workers in the construction industry, and surrounding areas, is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase is anticipated in association with construction for Alternative 4.

Operations

Less than significant impact. Under Alternative 4, an estimated 7,980 new housing units would become occupied with an additional 14,364 people added to county population. Population projections from SANDAG (2013) for the San Diego region (approximating San Diego County) indicate that from 2020 to 2050 the regional population would grow by nearly 1.0 million. The San Diego General Plan (City of San Diego, 2008) indicates a projected population increase for the City of San Diego, from 2020 to 2030, of approximately 134,000. While Alternative 4 would lead to the addition of substantial population, it would add only a fraction of that identified in plans and projections, and therefore would be consistent with plans, fulfilling goals rather than exceeding them.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

POP-b: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

Less than significant impact. The construction industry of San Diego County, with approximately 92,000 workers in the construction industry, and surrounding areas, is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase that might displace current residents is anticipated under Alternative 4.

Operations

Less than significant impact. Developments under Alternative 4 would not be constructed on land that is currently used for housing, would add to the number of affordable units in the socioeconomic ROI, and would not be likely to reduce affordability in low-income areas; therefore, no displacement is anticipated (see Section 4.2.3.3 in the EIS Appendix G).

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.5.1.4 Alternative 5 Impacts

POP-a: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

Less than significant impact. The construction industry of San Diego County, with approximately 92,000 workers in the construction industry, and surrounding areas, is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase is anticipated in association with construction for Alternative 5.

Operations

Less than significant impact. Under Alternative 5, an estimated 6,384 new housing units would become occupied with an additional 11,491 people added to county population. Population projections from SANDAG (2013) for the San Diego region (approximating San Diego County) indicate that from 2020 to 2050 the regional population would grow by nearly 1.0 million. The San Diego General Plan (City of San Diego, 2008) indicates a projected population increase for the City of San Diego, from 2020 to 2030, of approximately 134,000. While Alternative 5 would lead to the addition of substantial population, it would add only a fraction of that identified in plans and projections, and therefore would be consistent with plans, fulfilling goals rather than exceeding them.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

POP-b: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

Less than significant impact. The construction industry of San Diego County, with approximately 92,000 workers in the construction industry, and surrounding areas, is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase that might displace current residents is anticipated under Alternative 5.

Operations

Less than significant impact. Developments under Alternative 5 would not be constructed on land that is currently used for housing, would add to the number of affordable units in the socioeconomic ROI, and would not be likely to reduce affordability in low-income areas; therefore, no displacement is anticipated (see Section 4.2.3.3 in the EIS Appendix G).

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.5.2 Cumulative Impacts

Alternative 4 would induce a population increase of 14,364 people and Alternative 5 would induce a population increase of 11,491 people through the development of new housing units. Under both alternatives, the estimated population growth fits within parameters of population projections. Continued development of residential housing and multi-family units throughout San Diego County would also contribute to population growth over time. The overall population growth, however, is consistent with planning goals and expectations; therefore, the impact would be less than significant.

Neither Alternative 4 or Alternative 5 would displace any existing people or housing. The SANDAG 2050 RTP indicates that elements of that plan would lead to the displacement of people, housing, and businesses; the plan identifies this situation as a significant impact. The large scale of the SANDAG 2050 RTP, and the substantial displacement associated with it, indicates that there would be a significant cumulative impact related to displacement.

2.6 Cultural Resources and Tribal Cultural Resources

This section addresses both cultural resources (historical resources, archaeological resources, and human remains) and tribal cultural resources (something of cultural value to a California Native American tribe). Historical resources are recognized as part of the environment under CEQA section 15064.5 *Determining the Significance of Impacts to Archaeological and Historical Resources.* CEQA defines historical resources as any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.6.1, 3.6.2, and 3.6.3 of the EIS.

2.6.1 Impacts Determination

2.6.1.1 Impacts Summary

Table 2.6-1 presents a summary of impacts related to cultural and tribal resources for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.6-1 Impacts Related to Cultural and Tribal Resources

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
V. CULTURAL RESOURCES (CUL-) Would the project:	-	-	-	-
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	**X**	-	-	-
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	-	-	**X**	-
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	-	-	**X**	-
XVIII. TRIBAL CULTURAL RESOURCES (TRIBAL-) Would the project:	-	-	-	-
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	-	-	-	-
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	-	**X***	-	-
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	-	**X***	-	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

Note: *Impacts may be reduced to less than significant impact after mitigation measures are determined through consultation with the State Historic Preservation Officer and other interested parties.

2.6.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for cultural resources and tribal cultural resources are described in Section 3.6.6.1 of the EIS, *Cultural Resources*. The No Action Alternative would result in no impacts to cultural resources and tribal cultural resources.

2.6.1.3 Alternative 4 Impacts

CUL-a: Cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?

Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. While demolition and destruction create significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance.

Potentially Significant impacts. The Consolidated Aircraft Plant 2 Historic District is located within OTC Site 1. Construction of Alternative 4 would result in the demolition of all contributing resources of the Consolidated Aircraft Plant 2 Historic District. Alternative 4 would therefore impair the significance of the historical resource to the extent that it would result in loss of California Register of Historical Resources (CRHR) eligibility for the Consolidated Aircraft Plant 2 Historic District. Proposed construction under Alternative 4 includes 51 mid-rise (9 to 21 floors) and 35 high-rise (22+ floors) buildings that would introduce visual elements that are out of character for 19 historical resources (CRHR eligible) located within 0.5 mile of the project sites, and this change would alter their setting (Table 2.6-2 and Figure 3.6-4 in the EIS) (see the EIS Appendix H for detailed analysis). Two of those historical resources, Casa de Estudillo and San Diego Presidio, are also designated National Historic Landmarks.

Table 2.6-2 Historical Resources within the Area of Potential Impacts with Adverse Impacts

Address	*Historic Name*	*Year*	*SHPO Status Code**
Consolidated Aircraft Plant 2 Historic District	Consolidated Aircraft Plant 2 Historic District	1941	3D
Marine Corps Recruit Depot	Marine Corps Recruit Depot		1D
4016 Wallace Street (Old Town State Park)	Old Town San Diego State Historic Park	1821	1
2612 San Diego Avenue (Old Town State Park)	San Diego Union Office	1850	1D
2616 San Diego Avenue (Old Town State Park)	Pedporena Adobe	1869	1CS; 5D1
2724 Congress Street (Old Town State Park)	Casa de Machadnueo-Stewart	1830	1CS; 5D1
2731 San Diego Avenue (Old Town State Park)	San Diego Courthouse	1847	1D
2733 San Diego Avenue (Old Town State Park)	Colorado House	1851	1D
2737 San Diego Avenue (Old Town State Park)	Casa de Rodriguez	1830s	2D
2740 San Diego Avenue (Old Town State Park)	Plaza; San Diego Viejo; Washington Square	-	1D
2741 San Diego Avenue (Old Town State Park)	Casa de Machado	1835	1CS; 5D1
3966 Mason Street (Old Town State Park)	Mason Street School	1865	1CS; 5D1
4000 Mason Street (Old Town State Park)	Casa de Estudillo (NHL)	1828	1CS; 5D1
4000 Wallace Street (Old Town State Park)	Rose-Robinson Adobe Reconstruction	-	2D2
2293 San Juan Road	William Mason Fortesque	1955	5S2

Address	Historic Name	Year	SHPO Status Code*
	Residence		
2660 Calhoun Street (Old Town State Park)	Casa de Bandini	1829	1CS; 5D1
2727 Presidio Drive	San Diego Presidio (NHL)	1769	1S
3890 Twiggs Street	Casa Larga	1835	1CS; 5S1
2495 Jefferson Street (Survey)	2495 Jefferson Street	c.1927	5S3
Northwest Mission Hills Historic District (Survey)	Northwest Mission Hills Historic District	1908-1950	5D3

Legend: NHL = National Historic Landmark; NRHP = National Register of Historic Places; SHPO = State Historic Preservation Officer; Survey = Community Plan Area survey for either Old Town or Uptown.

Notes: * California Historical Resource Status Codes, defined at https://ohp.parks.ca.gov/pages/1069/files/chrstatus%20codes.pdf and https://ohp.parks.ca.gov/pages/1069/files/tab8.pdf

NRHP, CRHR, and local eligibility are indicated by codes that include:

NRHP eligible: 1, 1D, 1S, 2D, 2D2,

CRHR listed: 1CS, 1D, 1S, 2D, 2D2,

Locally eligible: codes that begin with 5.

Thirteen of the 19 resources are in Old Town State Historic Park, including the Casa de Estudillo. Views from Old Town State Historic Park toward the project sites, including the central plaza, are among the most impacted. Outside of the Old Town State Historic Park, the new construction would be clearly visible from San Diego Presidio, Casa Larga, William Mason Fortesque Residence, 2495 Jefferson Street, Marine Corps Recruit Depot, and Northwest Mission Hills Historic District. In particular, the impacted view is a character-defining feature of the Fortesque Residence, Northwest Mission Hills Historic District, and the San Diego Presidio because it directly relates to the historical significance of the resource.

Overall, the mass, scale, and height, as well as the contrast of the new construction, would be an incompatible change to the setting and views of these 19 historical resources. Therefore, implementation of Alternative 4 would result in extensive alterations to the setting of 19 historical resources (CRHR eligible), two of which are also National Historic Landmarks (Table 2.6-2).

As such, implementation of Alternative 4 would result in alterations such that the significance of historical resources would be impaired and therefore a substantial adverse change in the significance of historical resources and potentially significant impacts pursuant to section 15064.5.

No impact. Portions of La Playa Trail (P-37-028552) are located within the project sites. La Playa Trail consists of several historic public streets (Midway Drive between Rosecrans Street and Barnett Avenue; Enterprise Street between Midway Drive and Sports Arena Boulevard; and Rosecrans Street between Nimitz Boulevard and Pacific Highway). Alternative 4 would not change any of the associated historic public streets and, therefore, would not impact La Playa Trail.

No impact. After construction, the project sites would contain a NAVWAR facility along with a combination of mixed-use residential, office, hotel, and retail space. Proposed operations would have no impact on historical resources, especially after the proposed demolition of the contributing resources of the Consolidated Aircraft Plant 2 Historic District renders the district ineligible.

Mitigation Measures and Residual Impacts

Alternative 4 would result in potentially significant impacts to the Consolidated Aircraft Plant 2 Historic District and 19 additional nearby historical resources. Navy will develop measures to avoid, minimize or mitigate adverse effects on historic properties in consultation with the State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation, federally recognized Indian tribes, and other consulting parties. Mitigation measures defined through consultation may reduce impacts to less than significant.

Residual impact. The substantial adverse change in the significance of 20 historical resources would be lessened by the mitigation developed in consultation with SHPO but may not be lowered to a less than significant impact under CEQA. Therefore, even with mitigation, demolition of the Consolidated Aircraft Plant 2 Historic District and the extensive alterations to the setting of 19 other historical resources would remain a significant impact under Alternative 4.

CUL-b: Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?

It is possible that utilities may extend outside OTC Site 1 and OTC Site 2 within adjacent easements, but the location and extent of associated ground disturbance is not known at this time. Once future utility plans are identified for areas outside the project site, further analysis would be needed to determine if utility plans could result in a substantial adverse change under CEQA.

Less than significant. Under Alternative 4, proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no identified archaeological resources within these areas. Additionally, based on available geological data for these areas, there is low potential for buried unrecorded archaeological resources within the project site. To reduce the risk of damage to unknown archaeological sites, the Navy will develop an archaeological monitoring plan in consultation with SHPO and federally recognized Indian tribes. If an archaeological site was discovered during construction, the Navy would follow regulations for post-review discoveries, per 36 Code of Federal Regulations 800.13. As such, Navy and their contractors would avoid or minimize harm to unanticipated discoveries and stop work in the vicinity of the discovery until Navy concludes consultation with SHPO and federally recognized Indian tribes regarding the discovery. As such, there would be no substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5 and less than significant impacts to archaeological resources from proposed construction under Alternative 4.

No impact. Under Alternative 4, operations would not involve ground disturbance, and therefore would have no effect on archaeological resources. There would be no substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5 and no impacts to archaeological resources from proposed operations under Alternative 4.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

CUL-c: Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than significant. Under Alternative 4, proposed construction activities would result in ground disturbance at OTC Site 1 and OTC Site 2. There are no known human remains located within these areas. Additionally, based on available geological data and past development, there is low potential for unanticipated discovery of human remains, and therefore a low likelihood that such resources would be affected during construction. With standard operating procedures in place for inadvertent discoveries during construction activities, human remains would not be disturbed and there would be less than significant impacts from proposed construction under Alternative 4.

No impact. Under Alternative 4, operations would not involve ground disturbance. Therefore, operations would not disturb human remains, and no impacts would occur from proposed operations under Alternative 4.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

TRIBAL-a: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. **Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)**

Navy conducted inventories of cultural resources at the Navy OTC to identify properties that are listed or potentially eligible for listing in the National Register of Historic Places, including a California Historical Resources Information System record search and a review of recorded resources and prior inventories. A request was sent to the California Native American Heritage Commission to search their Sacred Lands File to determine whether their files contain any information relating to the presence of tribal cultural resources within the Alternative 4 area. The Native American Heritage Commission responded stating that the record search indicated the presence of Native American cultural resources in or within the vicinity of the Alternative 4 area (see EIS Appendix F and Attachment C). As part of the Section 106 consultation process, the Navy will consult with federally recognized Indian tribes to identify historic properties of traditional religious and cultural importance to them that may be affected by the Proposed Action.

Mitigation Measures and Residual Impacts

Navy will develop measures to avoid, minimize or mitigate adverse effects on archaeological resources in consultation with the SHPO and federally recognized Indian tribes .

Residual impact. Impacts would be lessened by the mitigation developed in consultation with SHPO and may be lowered to a less than significant impact under CEQA.

ii. **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

A request was sent to the California Native American Heritage Commission to search their Sacred Lands File to determine whether their files contain any information relating to the presence of tribal cultural resources within the Alternative 4 area. The Native American Heritage Commission responded stating that the record search indicated the presence of Native American cultural resources in or within the vicinity of the Alternative 4 area (see EIS Appendix F and Attachment C). As part of the Section 106 consultation process, the Navy will consult with federally recognized Indian tribes to identify historic properties of traditional religious and cultural importance to them that may be affected by the Proposed Action.

Mitigation Measures and Residual Impacts

Navy will develop measures to avoid, minimize or mitigate adverse effects on significant resources in consultation with the SHPO and federally recognized Indian tribes.

Residual impact. Impacts would be lessened by the mitigation developed in consultation with SHPO and federally recognized Indian tribes and may be lowered to a less than significant impact under CEQA.

2.6.1.4 Alternative 5 Impacts

Construction and Operations

Construction and operational impacts for Alternative 5 are similar to Alternative 4. Implementation of Alternative 5 would result in loss of CRHR eligibility for the Consolidated Aircraft Plant 2 Historic District. Overall, the mass, scale, and height, as well as the contrast of the new construction, would be an incompatible change to the setting and views of 19 historical resources (CRHR eligible). Therefore, implementation of Alternative 5 would result in extensive alterations to the setting of 20 historical resources, two of which are also National Historic Landmarks. As such, implementation of Alternative 5 would result in alterations such that the significance of historical resources would be impaired and therefore a substantial adverse change in the significance of historical resources and potentially significant impacts pursuant to section 15064.5 (see Section 2.6.1.3 for discussion of similar impacts). Alternative 5 would have no impact or less than significant impacts for the other significance criteria for cultural resources, as described under Alternative 4.

Mitigation Measures and Residual Impacts

Alternative 5 would result in potentially significant impacts to the Consolidated Aircraft Plant 2 Historic District and 19 additional nearby historical resources. Navy will develop measures to avoid, minimize or mitigate adverse effects on historic properties in consultation with the SHPO, Advisory Council on Historic Preservation, federally recognized Indian tribes, and other consulting parties. Mitigation measures defined through consultation may reduce impacts to less than significant.

Residual Impact. The substantial adverse change in the significance of 20 historical resources would be lessened by the mitigation developed in consultation with SHPO, Advisory Council on Historic Preservation, federally recognized Indian tribes, and other consulting parties but may not be lowered to a less than significant impact under CEQA. Therefore, even with mitigation, demolition of the Consolidated Aircraft Plant 2 Historic District and the extensive alterations to the setting of 19 other historical resources would remain a significant impact under Alternative 5.

2.6.2 Cumulative Impacts

2.6.2.1 Description of Geographic Study Area

The ROI for evaluating cumulative impacts on cultural resources is defined as the project site and adjacent communities (i.e., the Midway-Pacific Highway, Old Town, and Uptown communities). This area includes a 0.5-mile radius from the project site to ensure adequate consideration of visual impacts. Cultural resources are unique as well as finite in nature, so that an impact on a historical resource within the ROI may contribute to a cumulative impact.

2.6.2.2 Relevant Past, Present, and Future Actions

EIS Table 4.3-2 identifies those past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative cultural resource effects when combined with the Proposed Action Alternatives.

Although the ROI has been subject to extensive development, the cultural sensitivity for the area is still considered moderate. California Historical Resources Information System records indicate the presence of 184 previously recorded cultural resources, consisting of historic archaeological and architectural resources, within a half-mile radius of the project site. Numerous projects listed in EIS Table 4.3-2 have the potential to impact cultural resources, especially the various transportation improvement projects (SANDAG, San Diego International Airport) and redevelopment projects (Port of San Diego, Sport Arena Redevelopment) that include substantial ground disturbance and redevelopment. In general, construction-related ground disturbance has the potential to impact archaeological sites and traditional cultural resources, while building demolition, renovation, or changes in important viewsheds may affect historic buildings.

2.6.2.3 Alternatives 4 and 5

Implementation of Alternatives 4 or 5 would result in loss of CRHR eligibility for the Consolidated Aircraft Plant 2 Historic District. Additionally, the mass, scale, and height, as well as the contrast of the new construction, would be an incompatible change to the setting and views of 19 historical resources (CRHR eligible). Therefore, implementation of Alternatives 4 or 5 would result in extensive alterations to the setting of 20 historical resources, two of which are also National Historic Landmarks. As such, implementation of Alternatives 4 or 5 would result in alterations such that the significance of historical resources would be impaired and therefore a substantial adverse change in the significance of historical resources and potentially significant impacts pursuant to section 15064.5. The substantial adverse change in the significance of 20 historical resources would be lessened by the mitigation developed in consultation with SHPO but may not be lowered to a less than significant impact under CEQA.

Given the history and cultural importance of the ROI, notably historical resources such as the Old Town San Diego State Historic Park, Presidio Park, and Casa de Lopez, many of the identified present and foreseeable future cumulative projects are anticipated to have the potential to affect historical resources. The cultural measures contained in the Old Town Community Plan and the Midway-Pacific Highway Community Plan would also be relevant for the identified cumulative projects. If cumulative projects are within or near historically significant buildings, constructing such projects may damage or alter those resources and diminish their integrity.

None of the other reasonably foreseeable projects would impact the Consolidated Aircraft Plant 2 Historic District. While the demolition of the Consolidated Aircraft Plant 2 Historic District would remove the only remaining example of this type of historical resource within San Diego County, the Navy will develop measures to avoid, minimize, or mitigate adverse effects on historic properties in consultation with SHPO, Advisory Council on Historic Preservation, federally recognized Indian tribes, and other consulting parties. The Navy will also continue to manage cultural resources under their jurisdiction in accordance with applicable federal law and Navy policy.

Impacts from some of the listed past, present, and reasonably foreseeable future projects could overlap with impacts on the other 19 historic resources whose setting would be altered by Alternatives 4 and 5. The listed projects with the potential for significant impacts on cultural resources have been or will be evaluated under NEPA and/or CEQA, including consultations with regulatory agencies and stakeholders, such as the City of San Diego, Save our Heritage Organization, SHPO, and tribal governments, and the subsequent implementation of mitigation measures, as warranted. Even with mitigation, implementation of Alternatives 4 or 5 when combined with the past, present, and reasonably foreseeable future projects could result in potentially significant cumulative impacts to cultural resources.

2.7 Hazards and Hazardous Materials (Hazardous Materials and Wastes)

Hazardous materials are any materials that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous wastes are solid wastes that meet the hazardous materials definition. A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.7.1, 3.7.2, and 3.7.3 of the EIS, respectively.

2.7.1 Impacts Determination

Impacts resulting from hazardous materials and wastes are determined by applying the significance criteria to the potential changes in hazardous materials and wastes (e.g., types, volumes, processes, and management) that result from the alternatives.

2.7.1.1 Impacts Summary

Table 2.7-1 presents a summary of impacts related to hazards and hazardous materials for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.7-1 Impacts Related to Hazards and Hazardous Materials

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS (HW-) Would the project:	-	-	-	-
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	-	-	**X**	-
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	-	-	**X**	-
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	-	-	-	**X**
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	-	-	-	**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	-	-	**X**	-

Criteria	Potentially Significant	Less than Significant with Mitigation	Less than Significant	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	-	-	-	**X**
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	-	-	-	**X**

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.7.1.2 No Action/No Project Alternative Impacts

The impacts of the No Action Alternative for hazards and hazardous materials are described in Section 3.7.3.1 of the EIS, *Hazardous Materials and Wastes*. The No Action Alternative would result in less than significant impacts with respect to hazards and hazardous materials.

2.7.1.3 Alternative 4 Impacts

HW-a: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Less than significant impact. Building demolition and construction would use normal demolition and construction methods, which would limit the use of hazardous materials. Over the construction period, hazardous materials and petroleum substances would be used and stored at OTC to support demolition and construction activities. For example, fuels (e.g., diesel, gasoline) would be required to run equipment. In addition, paints, adhesives, and solvents would be used during construction activities. These materials would be stored in proper containers, employing secondary containment as necessary to prevent and limit spills. The routine use, transport, and disposal of these common hazardous materials would not create a significant hazard to the public or environment.

Operations

Less than significant impact. Hazardous materials management at would be similar to current management practices, however with the relocation of some laboratory, warehouse and storage space, there would be reductions in materials used for electronics maintenance, painting, and blasting. The types, amounts, and processes that use hazardous materials used by NAVWAR would be the same. Current management practices would continue. All contingency and spill plans would be updated accordingly. Management of any hazardous materials used by the transit center, residential, hotel, office, and retail functions planned under this alternative would be the responsibility of each tenant as specified in public-private development agreements. Hazardous materials used by these tenants are likely to consist of cleaners, paints, solvents, adhesives, lubricating oils, etc. These common hazardous materials used by these organizations would not create a significant hazard to the public or environment.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

HW-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

Less than significant impact. Volumes and types of materials used in the demolition and construction activities would not be of amounts that would create a significant hazard to the public or environment from an accident. These materials would be stored in proper containers, employing secondary containment as necessary to prevent and limit spills. Any spills or releases would be confined to the work site and responded to upon discovery of spill to minimize impacts.

Operations

Less than significant impact. Hazardous materials management would be similar to current management practices, however with the relocation of some laboratory, warehouse and storage space, there would be reductions in materials used for electronics maintenance, painting, and blasting. Current management practices would continue. All contingency and spill plans would be updated accordingly.

The management of any hazardous materials used by the transit, residential, hotel, office, and retail functions planned under this alternative would be the responsibility of each tenant as specified in public-private partner agreements. Volumes and types of materials used would not create a significant hazard to the public or environment on the result of an upset or accident.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

HW-c: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

No impact. OTC is located within 0.25 miles of the High Virtual Academy and the Fremont Elementary School. Hazardous materials substances and wastes would be the same as those described for HW-b. Due to the distance to the schools and the types and volumes of materials handled there would be no impact from the handling of hazardous materials at the project site to the schools.

Operations

No impact. All hazardous materials and wastes would be similar to those used and generated for present operations and would be managed in accordance with existing protocols. Due to the distance to the schools and the types and volumes of materials handled there would be no impact from the handling of hazardous materials at the project site to the schools.

Mitigation Measures and Residual Impacts

Impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

HW-d: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction and Operations

No impact. OTC is not located on a site listed pursuant to Government Code §65962.5 as verified by a review of the lists provided at https://calepa.ca.gov/SiteCleanup/CorteseList/.

Mitigation Measures and Residual Impacts

Impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

HW-e: For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and Operations

Less than significant impact. OTC is located within 2 miles of the San Diego International Airport. However, OTC is not located within a designated airport safety compatibility zone (San Diego County Regional Airport Authority, 2014). Nevertheless, redevelopment at OTC has the potential to affect airspace if there is a change to building heights (as proposed under Alternatives 4 and 5). Implementation of Alternatives 4 or 5 will require Federal Aviation Administration (FAA) review in accordance with 14 Code of Federal Regulations part 77. It is assumed that FAA approval is required under these regulations to avoid airspace conflicts. Therefore, the basis of the impact analysis for Alternatives 4 and 5 assume that this FAA review and approval occurs and that the proposed building heights are acceptable to the FAA. If FAA determines the selected alternative would conflict with FAA airspace requirements, the developer would work with the FAA and modify the design within the parameters of the EIS analysis.

The majority of OTC Site 1 is located outside of the 60 decibel (dB) Community Noise Equivalent Level (CNEL) noise contour, and the southern portion of OTC Site 2 is located between the 60-65 dB contours, as shown in Figure 3.13-2 of the EIS. No noise level reductions are prescribed by the Airport Land Use Compatibility Plan for commercial, office, service, or transient lodging uses within areas that experience 60-65 dB CNEL. The Airport Land Use Compatibility Plan would require noise sensitive uses, such as residential use, to not exceed interior levels of 45 dB CNEL. OTC is federal government/Navy-owned land and is thus exempted from Airport Land Use Compatibility Plan requirements. As such, the Navy would not require developers to follow noise level reduction guidelines of 20 dB for noise sensitive uses such as residences, as prescribed in the Airport Land Use Compatibility Plan, to meet the interior 45 dB CNEL level. However, typical new construction projects meeting current energy guidelines (such as recommendations on insulation or window types) often exceed noise level reductions necessary to reach the target interior noise levels specified by the Airport Land Use Compatibility Plan. Therefore, the risk that future noise sensitive uses such as residences would be negatively impacted by aircraft noise is relatively low. Based on the analysis presented above, there would be no safety hazard and a very low risk of a noise hazard related to air traffic for people working or residing in the project area. Therefore, there would be a less than significant impact related to this criterion. For a discussion of noise generated from the alternatives, refer to EIS Section 3.13, *Noise* and impact criterion NOI-c.

Mitigation Measures and Residual Impacts

Impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

HW-f: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction and Operations

No impact. OTC is not part of a city or state-adopted emergency response plan or emergency evacuation plan. Construction (including construction staging) and operational activities would occur within the existing project site footprint; therefore, no public streets or potential public evacuation routes will be impacted.

Mitigation Measures and Residual Impacts

Impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

HW-g: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Construction and Operations

No impact. OTC is located in a highly urbanized environment and is well removed from wildlands. The nearest fire hazard zone is located to the east, approximately 0.3 miles away and is separated from that zone by Interstate 5 and urban development (Ready San Diego, 2020).

Mitigation Measures and Residual Impacts

Impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.7.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for hazards and hazardous materials under Alternative 5 would be identical to those under Alternative 4. Therefore, Alternative 5 would have no impacts or less than significant impacts for each of the significance criteria for hazards and hazardous materials.

Mitigation Measures and Residual Impacts

Impact avoidance and standard minimization design features would lessen any potential impacts from hazards and hazardous materials to less than significant levels. Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.7.2 Cumulative Impacts

2.7.2.1 Hazardous Materials and Waste

Description of Geographic Study Area

The ROI for hazardous materials and hazardous and solid wastes corresponds to OTC, adjacent properties, and regional waste disposal/recycling locations. This ROI thus considers the use of hazardous materials and wastes at and adjacent to OTC, existing Installation Restoration sites at OTC, known off-

OTC contamination/remediation sites adjacent to OTC, and local landfills and recycling locations that would serve OTC and the identified cumulative projects.

Relevant Past, Present, and Future Actions

Table 4.3-2 in the EIS identifies those past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative hazardous materials and waste effects when combined with the Proposed Action Alternatives. The alternatives involve varying degrees of development and activities that would properly use necessary hazardous materials (e.g., petroleum products, metals), generate and manage hazardous waste, generate demolition and construction debris, and generate municipal solid waste during operations. The list of projects also includes ongoing remediation and cleanup projects.

Examples of such projects include projects at the Port of San Diego, Marine Corps Recruit Depot San Diego, construction of the ITC, the San Diego International Airport Development Plan, the Navy Broadway Complex/Manchester Gateway Development Project, the Post, and the Sports Arena redevelopment. Other projects include the Hacienda Heights Apartments project and the construction of three Liberty Station hotels. Other projects that have a potential to affect this resource area are related to investigations/remediation of existing contamination sites. These include remediation of OTC Installation Restoration Sites 1, 10, and 11 and suspected areas of per- and poly-fluoroalkyl substances (commonly referred to as PFAS) contamination, as well as the cleanup of two nearby off-installation hazardous wastes sites.

Alternatives 4 and 5

No cumulative impacts for CEQA criteria HW-c, HW-d, HW-f, and HW-g would occur because implementation of either Alternative 4 or 5 would not result in impacts under these criteria. Alternatives 4 and 5 result in less than significant impacts for HW-a, HW-b, and HW-e and therefore these criteria carried forward for cumulative analysis.

Under criterion HW-a (Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?) impacts associated with Alternatives 4 and 5 combined with the relevant past, present, and future actions identified in EIS Table 4.3-2 would not be expected to result in significant impacts. Unusual or exotic hazardous materials are not likely to be transported, used, or disposed. Hazardous materials would likely consist of paints, adhesives, solvents, cleaners, lubricating oils, etc. These materials would not be expected in amounts that would create a significant hazard and would be stored and used in geographically separate locations. Hazardous materials resulting from the cleanup of contaminated sites would be handled in accordance with all applicable regulations and would result in an overall beneficial impact once cleanup is completed.

Under criterion HW-b (Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?) impacts associated with Alternatives 4 and 5 combined with the relevant past, present, and future actions identified in EIS Table 4.3-2 would not be expected to result in significant impacts. As noted above these materials would be used and stored in geographically separate locations. Therefore, incidents at any one location would be isolated from hazardous materials at other locations.

Under criterion HW-e (For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?) impacts associated with

Alternatives 4 and 5 combined with the relevant past, present, and future actions identified in Table 4.3-2 would not be expected to result in cumulative impacts. The OTC is located outside of all designated airport safety compatibility zones, therefore, there would be no cumulative safety impacts. Numerous cumulative projects would be located within San Diego International Airport Noise Zones, however Alternatives 4 and 5 would not result in noise related to air traffic. For a discussion of cumulative noise generated from the alternatives and the identified cumulative projects, see Section 3.13, *Noise* and impact criterion NOI-c.

2.8 Wildfire (Public Health and Safety)

A wildland fire is any non-structure fire that occurs in areas of vegetation or natural fuels and can be either a prescribed fire or wildfire. Wildland fire occurs when vegetation, or "fuel," such as grass, leaf litter, trees, or shrubs, is exposed to an ignition source and the conditions for combustion are met, resulting in fire growth, and spread through adjacent combustible material. Wildland fires are either ignited by lightning or by some consequence of human activity.

A description of the ROI, approach to analysis, regulatory setting, and affected environment are presented in Sections 3.8.1.1, 3.8.1.2, 3.8.1.3, and 3.8.1.4 of the EIS, respectively.

2.8.1 Impacts Determination

2.8.1.1 Impacts Summary

Table 2.8-1 presents a summary of impacts related to wildfire for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.8-1 Impacts Related to Wildfire

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
XX. WILDFIRE (WF-) Would the project:	-	-	-	-
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	-	-	**X**	-
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	-	-	-	**X**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	-	-	**X**	-
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	-	-	-	**X**

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.8.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for wildfire are described in Section 3.8.3.1 of the EIS, *Public Health and Safety*. The No Action Alternative would result in less than significant wildfire impacts.

2.8.1.3 Alternative 4 Impacts

WF-a: Substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction and Operations

Less than significant impact. OTC is not part of a city or state-adopted emergency response plan or emergency evacuation plan. Construction (including construction staging) and operation activities would occur within the existing OTC footprint. Implementation of Alternative 4 would bring an influx of users, occupants, and residents to OTC and the surrounding area. Additional police, fire, and first responders would be needed to maintain current levels of service for all emergencies (including wildfires) in the project area. However, the costs associated with additional public service resources would be covered by the additional tax revenues and pertinent development impact fees. Future community, emergency response, and evacuation plans would be updated to incorporate OTC modernization and its potential effects on the surrounding community. Therefore, Alternative 4 would result in less than significant impacts to public streets, potential public evacuation routes, and community emergency response plans.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

WF-b: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction and Operations

No impact. As described in Section 3.8.3 and shown on Figure 3.8-1 of the EIS, OTC is not located in a “high” or “very high” Fire Hazard Safety Zone. Although a significant portion of San Diego County is designated as a “high” or “very high” Fire Hazard Safety Zone, OTC is located in a highly urbanized area. Construction and operations under Alternative 4 would not exacerbate wildfire risks nor expose project occupants to wildfire pollution concentrations greater than any other part of the surrounding urbanized area. Therefore, Alternative 4 would result in no impacts to wildfire risks or project occupants.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

WF-c: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction and Operations

Less than significant impact. The OTC property is located in a highly urbanized area and would not require the installation of roads, fuel breaks, emergency water sources, or new power lines. Under Alternative 4, there would be a greater demand on existing utilities (electricity, natural gas, water, and sewer). The additional demand for utilities would be addressed in the planning, design, permitting, and ultimately the construction phases of project development. Therefore, Alternative 4 would result in less than significant impacts to infrastructure.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

WF-d: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The OTC property is located in a highly urbanized area that is not susceptible to flooding, landslides, runoff, or drainage hazards. Additionally, the Proposed Action area is not located within a "high" or "very high" Fire Hazard Safety Zone. Therefore, Alternative 4 would not impact the exposure of people or structures to significant risk from downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

2.8.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for wildfire hazards under Alternative 5 would be identical to those under Alternative 4 (Section 2.8.1.3). Therefore, Alternative 5 would have no impacts or less than significant impacts for each of the significance criteria for wildfire.

Mitigation Measures and Residual Impacts

Impact avoidance and minimization measures (design features) in the EIS would lessen any potential impacts to wildfire hazards to less than significant levels. Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.8.2 Cumulative Impacts

2.8.2.1 Wildfire (Public Health and Safety)

Description of Geographic Study Area

The ROI for public health and safety is generally defined as the existing OTC installation boundaries. However, off-installation areas may also become part of the ROI in instances where there is a potential for off-installation areas to affect, or be affected by, the Proposed Action. An example of off-installation influence would be if the Proposed Action directly elevated the wildfire hazard beyond OTC boundaries, or if the Proposed Action put OTC users and occupants in elevated danger from an off-site wildland fire as a result of project implementation.

Although a significant portion of San Diego County is designated as a "high" or "very high" Fire Hazard Safety Zone, OTC is located in a highly urbanized area. As described in Section 3.8.3 and shown on Figure 3.8-1 of the EIS, OTC is not located in a "high" or "very high" Fire Hazard Safety Zone.

Alternatives 4 and 5 include the consolidation of the Old Town Transit Center on OTC. The consolidation of transit services from the Old Town Station to OTC would have no impact on the existing wildland fire hazard.

Relevant Past, Present, and Future Actions

Table 4.3-2 in the EIS identifies those past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative public health and safety effects when combined with the Proposed Action Alternatives. These projects include those that have the potential to be affected by, or affect, emergency services, air quality, aircraft safety compatibility, geologic hazards, electromagnetic radiation, hazardous materials and wastes, noise, security and force protection, and protection of children. Due to the urban setting of the Proposed Action, a direct threat from wildfire risk is not considered in this section.

Alternatives 4 and 5

Potential impacts from the public-private portions of OTC and the transit center under Alternatives 4 and 5 would come from the introduction of more people within and adjacent to the OTC boundaries (utilizing residential, office, dining, retail space, and the transit center). This includes having higher public use, including by children and elderly, than before. Consistent with the Midway-Pacific Highway Community Plan, Alternatives 4 and 5 would improve community access to public transportation and improve pedestrian safety and circulation through and around the OTC area during the day and night. Potential impacts to or from wildfire hazards would be less than significant since OTC is located within a highly urbanized environment.

Due to their proximity to OTC, Projects 15 (Pacific Highway Cycle Tracks), 21 (Barnett Bridge Rehabilitation), 24 (ITC), and 25 (APM) are the most likely cumulative projects to affect or be affected by OTC redevelopment. Those projects, like the Proposed Action, would not contribute substantially to wildfire hazards and therefore would not increase the hazard from wildfire at or to OTC.

Alternatives 4 and 5 and the cumulative projects would be consistent with the Midway-Pacific Highway Community Plan, which serves as a framework for ensuring that future development in the ROI prioritizes the health and safety of the public. Therefore, when added to the impacts from the identified cumulative projects, there would be no significant cumulative impacts to the wildfire aspect of public health and safety from implementation of Alternatives 4 and 5.

2.9 Public Services

Public services are a key part of any relationship between citizens and their governments. They represent the primary benefits that populations receive from payment of taxes. A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.10.1, 3.10.2, and 3.10.3 of the EIS, respectively. Government revenue generated by the Proposed Action Alternatives would be sufficient to fund the additional public services that would be required to maintain recent ratios. If property leaves federal ownership, property owners would pay local taxes on the value of their property and would be subject to local fees and assessments to the same extent as similarly situated entities and developments within the City of San Diego. If instead development were to occur on federally owned property under a lease scenario, the developer’s possessory interest in Federal land and improvements thereto would likely be taxable in accordance with the Constitution of the State of California and laws enacted thereunder. Other local fees and assessments would only apply in this latter scenario to the extent the Navy were to enter into an agreement with the City granting the City this authority over the private development on Federal land.

2.9.1 Impacts Determination

2.9.1.1 Impacts Summary

Table 2.9-1 presents a summary of impacts related to public services for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.9-1 Impacts Related to Public Services

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
XV. PUBLIC SERVICES (PS-) Would the project:	-	-	-	-
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	-	-	-	-
i. Fire protection?	-	-	X	-
ii. Police protection?	-	-	X	-
iii. Schools?	-	-	X	-
iv. Parks?	-	-	X	-
v. Other public facilities?	-	-	-	X

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.9.1.2 No Action / No Project Alternative Impacts

The impacts of No Action Alternative for public services are described in Section 3.10.3.1, *Public Services*, of the EIS. The No Action Alternative would not generate additional population nor result in a need for additional public services facilities and would therefore result in no impacts to public services.

2.9.1.3 Alternative 4 Impacts

PS-a: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

i. Fire Protection

Construction

Less than significant impact. The construction industry of San Diego County, and surrounding areas (numbering 92,000 workers), is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase that would require additional fire protection facilities is anticipated in association with construction for Alternative 4. There would be additional demands on fire services, related to activity at construction sites, however the additional demands would not be extensive enough to require additional fire facilities would be required to meet those demands.

Operations

Less than significant impact. Under Alternative 4 it is anticipated that an additional nine Fire/emergency medical personnel would be required to maintain current levels of service. This requirement would grow over time with three required as of 2035 and five as of 2040. The population growth fits into current planning parameters and would not in and of itself require the construction of a new fire station. Government revenue generated by the Proposed Action Alternatives would be sufficient to fund the additional public services that would be required to maintain recent ratios. The project would comply with all applicable fire codes and, prior to construction, the project applicant would consult with fire officials in order to ensure that response times to the area are not substantially affected.

Mitigation Measures and Residual Impacts

Impact avoidance and minimization measures (design features) in the EIS would lessen any potential impacts to response times to less than significant levels. Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

ii. Police Protection

Construction

Less than significant impact. The construction industry of San Diego County, and surrounding areas, (numbering 92,000 workers), is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase that would require additional police protection facilities is anticipated in association with construction for Alternative 4.

Operations

Less than significant impact. Under Alternative 4 it is anticipated that an additional 11 uniformed police officers would be required to maintain current levels of service. This requirement would grow over time with four required as of 2035 and six required as of 2040. The population growth fits into current planning parameters and would not, in and of itself require the construction of a new police station. Government revenue generated by the Proposed Action Alternatives would be sufficient to fund the additional public services that would be required to maintain recent ratios. The project would comply with all applicable fire codes and, prior to construction the project applicant would consult with police officials in order to ensure that response times to the area are not substantially affected.

Mitigation Measures and Residual Impacts

Impact avoidance and minimization measures (design features) in the EIS would lessen any potential impacts to response times to less than significant levels. Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

iii. Schools

Construction

Less than significant impact. The construction industry of San Diego County, and surrounding areas, (numbering 92,000 workers), is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county; therefore, no permanent population increase that would require additional schools is anticipated in association with construction for Alternative 4.

Operations

Less than significant impact. Under Alternative 4 it is anticipated that an additional 37 teachers would be required to maintain current levels of service. This requirement would grow over time with 12 required as of 2035 and 21 required as of 2040. Government revenue generated by the Proposed Action Alternatives would be sufficient to fund the additional public services that would be required to maintain recent ratios. As indicated in Section 3.5, *Socioeconomics*, the project would not lead to a condition of overcapacity in schools and therefore would not require the construction of a new school.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

iv. Parks

Construction

Less than significant impact. The construction industry of San Diego County, and surrounding areas, (numbering 92,000 workers), is sufficient to supply the necessary workforce to complete construction projects without additional population relocating to the county. In addition, OTC does not include city or county parks. Therefore, no permanent population increase that would require additional parks is anticipated in association with construction for Alternative 4.

Operations

Less than significant impact. The additional residents would increase the population-based park requirements for the community by approximately 40.2 acres for Alternative 4. A portion of parkland would be provided at OTC within the project footprint and would not have an adverse physical effect on the environment. The portion of parkland to be provided outside the OTC project footprint is currently unknown. Any new parkland developed would undergo the appropriate level of NEPA and/or CEQA analysis. In addition, the developers would work with the City of San Diego during the development process to meet the parks requirement. Therefore, it is assumed that additional recreational facilities developed outside the OTC project footprint as a result of the city's parkland planning factor would not have an adverse physical effect on the environment.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

v. Other Public Facilities

Construction

It is not anticipated that construction for Alternative 4 would require new, or physically alter, other public facilities in order to maintain acceptable service ratios or other performance objectives. Therefore, no impacts would occur.

Operations

It is not anticipated that operations for Alternative 4 would require new, or physically alter, other public facilities in order to maintain acceptable service ratios or other performance objectives. Therefore, no impacts would occur.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, there are no residual impacts.

2.9.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for public services Alternative 5 would be similar, but slightly less due to the lower density of development than those described under Alternative 4 (Section 2.9.1.3). Therefore, Alternative 5 would have less than significant impacts for each of the significance criteria for public services.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

2.9.2 Cumulative Impacts

2.9.2.1 Description of Geographic Study Area

The ROI for public services includes potentially affected public service providers in San Diego County with a focus on those specific locations (such as schools or police stations) near the project area (refer to Figure 3.10-1 in the EIS).

2.9.2.2 Relevant Past, Present, and Future Actions

Table 4.3-2 in the EIS identifies those past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative public service effects when combined with the Proposed Action Alternatives. The projects would result in an increase in demand for public services.

The Navy Broadway Complex/Manchester Gateway Development Project, the Hacienda Heights Apartments, and the University of California San Diego Long Range Development Plan for the Hillcrest Campus would be expected to increase permanent population in the ROI and therefore would generate additional demands on public services. The additional population would likely require additional personnel at public service agencies to maintain current levels of service. These projects would also generate government revenue that could be used to fund the additional demands. Also, legal requirements on developers to provide financial support for public services would support maintenance of levels of service.

Land use plans, such as the San Diego General Plan and the Midway-Pacific Highway Community Plan, do not in and of themselves spur population growth, but rather provide a framework to help ensure that additional population would not have adverse impacts to social and physical infrastructure. As described in the Midway-Pacific Highway Community Plan, parks, public spaces, and schools are vital to support a growing population (City of San Diego, 2019d).

2.9.2.3 Alternatives 4 and 5

Implementation of Alternative 4 and Alternative 5 would necessitate the development of additional parkland. The alternatives would not in and of themselves necessitate the construction of additional schools, police or fire stations, or other public services, but would contribute to the future need for additional facilities for those public services. Any additional facilities required due to population growth associated with Alternatives 4 and 5 combined with cumulative projects must meet planning and permitting requirements and pay applicable impact fees as required. Because the additional facilities would meet requirements and pay applicable fees, it is not likely that construction of the additional facilities would cause significant environmental impacts. Therefore, there would not be a significant cumulative impact associated with Alternatives 4 or 5.

2.10 Utilities/Service Systems and Energy (Infrastructure)

This section describes the potential environmental impacts to utilities/service systems and energy (including potable water supply, sewer and wastewater, solid waste management, stormwater runoff infrastructure, electricity, natural gas, and telecommunications) from the implementation of the Alternatives 4 and 5. A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.11.1, 3.11.2, and 3.11.3 of the EIS, respectively.

2.10.1 Impacts Determination

2.10.1.1 Impacts Summary

Table 2.10-1 presents a summary of impacts related to utilities/service systems and energy for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.10-1 Impacts Related to Utilities/Service Systems and Energy

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
VI. ENERGY (EN-) Would the project:	-	-	-	-
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	-	-	**X**	-
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	-	-	**X**	-
XIX. UTILITIES AND SERVICE SYSTEMS (UTIL-) Would the project:	-	-	-	-
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	-	-	**X**	-
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	-	-	**X**	-

	Criteria	Potentially Significant	Less than Significant with Mitigation	Less than Significant	No Impact
c)	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	-	-	X	-
d)	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	-	-	X	-
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	-	-	X	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.10.1.2 No Action/No Project Alternative Impacts

The impacts of the No Action Alternative for utilities, service systems, and energy are described in Section 3.11.3.1 of the EIS, *Infrastructure*. No increases in energy use would occur under the No Action Alternative, and the OTC would continue to comply with state and local plans. The No Action Alternative would have no impacts on utilities, service systems, and energy.

2.10.1.3 Alternative 4 Impacts

UTIL-a: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Construction

Less than Significant Impacts. Construction would result in reconfiguration of on-site infrastructure for the conveyance of public utilities, due to the expanded foundation and footprint of the Proposed Action. However, off-site public infrastructure would not need to be relocated or expanded. Figure 3.11-5 of the EIS shows a block-by-block representation of on-site utilities distribution for water, sewer and stormwater, sufficient for Alternative 4. The figure represents a conceptual design. Final design would determine the exact placement for each utility. The relocation and/or replacement of existing infrastructure would be in conformance with Navy's established or adopted building standards and Uniform Building Codes. Reconnection to utilities would take place during off-peak hours to avoid interruption of service.

Operations

Less than Significant Impacts. Since existing public water delivery infrastructure in the project area are currently operating within their service capacity, modifications or development of new water infrastructure would not be necessary to service Alternative 4. Water easements may need to be relocated within the Alternative 4 footprint. Alternative 4 would neither require the modification or development of new public infrastructure, nor result in the use of a substantial portion of remaining capacity. Therefore, Alternative 4 would result in less than significant impacts to water utilities.

The City of San Diego Sewer Design Guide identifies criteria for the design of sewer systems and requires preparation of a sewer planning study for new sewer facilities that demonstrates that there are no negative impacts on the existing sewer system. The modified system would take place on-site and be designed to provide adequate capacity to handle the expected wastewater associated with the proposed project and maintain flow conditions to ensure plumbing construction in compliance with City of San Diego Sewer Design Guide and California Plumbing Code. The implementation of new and modified sewer facilities constructed in compliance with the city's Sewer Design Guide would ensure that adequate conveyance of the projected increase in wastewater flow would be provided for Alternative 4.

The density of uses proposed by Alternative 4 would increase the amount of wastewater conveyed through existing sewer facilities. However, Alternative 4 would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project. Alternative 4 would not exceed the capacity of conveyance or treatment of wastewater for the project site. Impacts to wastewater and sewer systems would remain less than significant.

The estimated increase in electricity demand for Alternative 4 is related to the private development which would add 68,306 megawatts per hour. Alternative 4 would require an additional 71,406 megawatts per hour, compared to the No Action Alternative. Due to the increased efficiency of modern construction, fixtures, and appliances, in general the intensity of use per square feet of space would be expected to decrease under Alternative 4, compared to current operations. Additional electricity demand for Alternative 4 would represent approximately 1.8 percent of current demand within the San Diego Gas and Electric (SDG&E) planning area. SDG&E performs modeling for electrical power demand on a continual basis to manage resource portfolios and infrastructure needs. New power loads are considered together with other foreseeable loads in the project vicinity and any upgrades to distribution networks or substations would be identified. The current 69-kilovolt circuits running along north western edge of OTC, terminating at the "NTCQ" substation would serve the project loads. There would be no need to upgrade the electrical distribution infrastructure as a result of the project.

Alternative 4 could potentially increase natural gas consumption by 134,911 thousand cubic feet compared to the No Action Alternative. According to the current and projected estimates reported in the 2018 California Gas Report, this represents approximately 0.3 percent of gas demand for the SDG&E planning area. This level of increased demand could be supplied by the current public infrastructure including the 16-inch steel pipeline under Pacific Highway.

Although Alternative 4 would result in increases in consumption of energy, it is not outside of the planned demand increases described in the California Demand Forecast for 2018-2030, or the California Gas Report 2016. While energy use at the site would increase, energy intensity of use is expected to decrease due to sustainable design standards and energy saving efficiencies that would be part of final design pursuant to Navy's instruction. The energy supplier for the project, SDG&E, delivered 45 percent renewable energy to its customers last year, well in excess of the current Renewables Portfolio Standard of California. SDG&E is expected to continue to expand its renewables portfolio in line with state goals. Along with sustainable design standards and energy saving efficiencies that would be part of final design pursuant to Navy's instruction, this energy use increase is expected to comply with federal orders and guidelines.

Therefore, Alternative 4 would result in less than significant impacts to capacities and infrastructure of electrical and gas utilities.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, impacts would be less than significant.

UTIL-b: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction

Less than Significant Impacts. Existing water utilities would need to be sourced through public infrastructure during construction If existing water supplies are sourced for the operational activities that would remain on the project site during construction, use levels would remain below current operational levels. Current levels of water service to the project site are sufficient to support remaining operational activities during construction of Alternative 4. Water delivery services would be necessary to supply water for construction activities. Temporary potable water sources would be provided by a private contractor for construction workers during demolition and construction activities. Public utilities would not be accessed for construction use. Water demand from public utilities would not be increased during construction.

Operations

Less than Significant Impacts. Alternative 4 is estimated to consume 2,182,793 gallons per day of water. Estimated water use by the Navy under Alternative 4 is estimated to decrease by 18,755 gallons per day to approximately 141,080 gallons per day, while the proposed private development would account for 2,041,713 gallons per day of added water consumption. The high water demand from the proposed private development is mainly due to the addition of 10,000 residential units, which would account for 1,766,772 gallons per day of this increase. Due to the number of residential units and the overall increase in potable water demand, California Water Code Sections 10910-10915 would require the San Diego Public Utilities Department to determine whether the water demands of the proposed project were accounted for in the Urban Water Management Plan and complete a Water Supply Assessment for the project.

The current water supply in the San Diego County Urban Water Management Plan is reported as 200,984-acre feet per year for 2020, increasing to 273,408 by 2040 and beyond (San Diego County Water Authority, 2016). The total project demand for Alternative 4 would account for 1.2 percent of current supply and 0.9 percent of future water supply. The peak hourly rate could account for 3.8 percent of system delivery capacity from the Alvarado Treatment Plant. Although it appears that there is sufficient water supply capacity to serve Alternative 4, a Water Supply Assessment would be required by the City of San Diego Public Utilities Department to determine the extent to which the project would increase water demand and how to convey available water supplies from existing entitlements and resources. Ultimately, the city would need to determine that adequate supply exists to serve Alternative 4 without affecting San Diego Public Utilities Department's ability to fulfill its existing and future obligations under normal dry and multiple dry year conditions. These studies would also synchronize project phasing and project proponents would coordinate with San Diego Public Utilities Water Department to refine the timing of the expected demand.

Therefore, the analysis has not determined that any significant impacts would occur as a result of Alternative 4.

Mitigation Measures and Impacts after Mitigation

Significant impacts have not been determined for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

UTIL-c: Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction

Less than Significant Impacts. Existing wastewater utilities would need to be sourced through public infrastructure during construction. If existing wastewater utilities are sourced for the operational activities that would remain on the project site during construction, wastewater generation would remain below current operational levels. Existing sewer utilities connecting to the project site are sufficient to support operational activities during construction of Alternative 4. Temporary wastewater services would be necessary during construction. Temporary portable toilets could be provided by private contractor for construction workers during demolition and construction activities. There would be no increased demand on wastewater and sewer infrastructure during construction.

Operations

Less than Significant Impacts. The Point Loma Wastewater Treatment Plant is operating at approximately 73 percent of full capacity. It has capacity to treat 240 million gallons per day of wastewater and currently treats approximately 175 million gallons of wastewater per day (San Diego Public Utilities Department, 2014). Existing wastewater infrastructure in the OTC area is currently operating within service capacity, and there are no identified infrastructure deficiencies (San Diego Public Utilities Department, 2014).

The sewage flow to Point Loma Water Treatment Plant would increase by up to 1.4 million gallons per day, or approximately 0.6 percent of system capacity. The City of San Diego wastewater hydraulic capacity was modeled to handle the urban flows typical in the Downtown area. The potential increase in wastewater that would be generated by Alternative 4 would not significantly affect the quality of water discharged from the outfall and would not affect the ability of the city to provide secondary treatment of the wastewater. It would also not significantly affect the capacity of the wastewater treatment system. Alternative 4 would not exceed the capacity of conveyance or treatment of wastewater for the project site, therefore a less than significant impact would occur.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, less than significant impacts would occur.

UTIL-d: Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction

Less than Significant Impacts. Construction and demolition would result in generation of increased levels of solid wastes. Alternative 4 would generate an estimated 27,786 tons of total construction and demolition debris, of which 9,725 tons will be delivered to the Miramar Landfill. The rest will be diverted to recycling and reuse according to waste reduction standards of San Diego County. Specific loads of construction and demolition wastes are combined with operational wastes below to consider the maximum impact in a single year for determination of impacts to municipal solid waste disposal utilities.

Operations

Less than Significant Impacts. As stated above, the total construction and demolition debris are combined with solid waste that would be generated during the first year of operations, to assess worst case scenario. An additional 33,443 tons of solid waste would be generated annually due to operations, of which 16,722 tons would be directed toward Miramar Landfill. When solid waste from operational activities is combined with the construction and demolition debris (9,725 tons), a total of 26,447 tons of solid waste would be delivered to the Miramar Landfill under Alternative 4. The rest will be diverted to recycling and reuse according to waste reduction standards mandated by the state and set forth in San Diego County's Strategic Plan to Reduce Waste.

According to San Diego Public Works Department, the Miramar Landfill accepts 910,000 tons of solid waste annually. Therefore, the maximum combined quantity of municipal solid waste generated as a result of Alternative 4 would represent about 2.91 percent of average annual solid waste accepted by the Miramar Landfill if all construction waste were combined with 1 year of annual waste generated by operation activities. However, construction and demolition are likely to take place over several years, so the actual amounts delivered to landfills each year are expected to be lower. Additionally, after construction has been completed, the average annual contribution of solid waste to Miramar Landfill would only represent about 1.8 percent of total solid waste delivered annually to the Miramar Landfill. Solid waste that would be generated during operations of Alternative 4 would only represent 0.6 percent of permitted throughput capacity. Therefore, Alternative 4 would result in less than significant impacts on the municipal solid waste facilities serving the project site.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

UTIL-e: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction

Less than Significant Impacts. According to the DoD Strategic Sustainability Performance Plan, a significant portion (60 percent) of construction and demolition wastes would be diverted. San Diego County's Strategic Plan to Reduce Waste, includes California state goals of 75 percent waste diversion for recycling and reuse. The amount of solid waste diverted under Alternative 4 would be consistent with federal, state, and local management and reduction statutes and regulations. Therefore, impacts related to Alternative 4 would be less than significant.

Operations

Less than Significant Impacts. Per AB 939, San Diego Municipal Code Chapter 6, and San Diego County Public Works guidelines require that 50 percent of solid waste be diverted for recycling or reuse. The project will divert at least more than 50 percent of solid waste from landfills. Alternative 4 would comply with waste management and reduction statutes and regulations. Therefore, impacts related to Alternative 4 would be less than significant.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

EN-a: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Less than Significant Impacts. Existing electricity and natural gas utilities may need to be sourced during construction. If existing electrical or natural gas utilities are sourced during construction, use levels would remain below current operational levels based on a decreased footprint and need for electrical supply. Current levels of electrical and natural gas service to the project site are sufficient to support any remaining operational activities that would occur on the project site during construction of Alternative 4. In general, demand for electricity sourced through public infrastructure would decrease during construction. Current infrastructure would be used to convey resources to the portions of the OTC where operations are continuing during construction. Energy for construction would mainly be in the form of fuels to power equipment. This would not contribute to wasteful or inefficient use of energy since it would be similar to what is currently employed to convey energy to and from the site.

Operations

Less than Significant Impacts. The estimated increase in electricity demand for Alternative 4 is associated with the proposed private development, which consume an additional 68,306-megawatt hours over the No Action Alternative. Alternative 4 would require an additional 71,406-megawatt hours of electricity, compared to the No Action Alternative.

According to the California Energy Demand Updated Forecast for 2018-2030, total demand for the SDG&E planning area is 4,024 gigawatts per hour. Additional electricity demand for Alternative 4 would represent approximately 1.8 percent of current demand within the SDG&E planning area. SDG&E performs modeling for electrical power demand on a continual basis to manage resource portfolios and infrastructure needs. New power loads are considered together with other foreseeable loads in the project vicinity and any upgrades to distribution networks or substations would be identified. The current 69-kilovolt circuits running along the northwestern edge of project site terminates at the “NTCQ” substation, which would serve the project loads. There would be no need to upgrade the electrical distribution infrastructure as a result of Alternative 4.

Alternative 4 could potentially increase natural gas consumption by 134,911 thousand cubic feet compared to the No Action Alternative. Based on the current and projected estimates reported in the 2018 California Gas Report, natural gas consumption from Alternative 4 represents approximately 0.3 percent of gas demand for the SDG&E planning area.

Although Alternative 4 would increase energy consumption, the projected energy demand is within the planned demand increases described in the California Demand Forecast for 2018-2030, or the California Gas Report 2016. While overall energy use at the project site would increase, energy efficiency would also increase due to sustainable design standards and energy saving features that will be part of the final design pursuant to Navy’s instruction. Therefore, impacts to electrical and gas utilities would be less than significant.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, less than significant impacts are expected.

EN-b: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction

Less than Significant Impacts. There would be no increased use of public utilities and infrastructure related to electricity or natural gas during construction. The majority of energy used on site would be related to construction equipment and the majority of this power demand would be met through portable generators in the field and connections to existing utilities would be limited.

Operations

Less than Significant Impacts. While overall energy use at the project site would increase with implementation of Alternative 4, energy intensity of use is expected to decrease due to sustainable design standards and energy saving efficiencies that will be part of final design pursuant to Navy's instruction. The energy supplier for the project, SDG&E, delivered 45 percent renewable energy to its customers last year, well in excess of the current Renewables Portfolio Standard of California which currently mandates that 30 percent electricity consumption is derived from renewable energy. SDG&E is expected to continue to expand its renewables portfolio in line with state goals to achieve the milestones set forth in SB 100. Along with sustainable design standards and energy saving efficiencies that will be part of final design pursuant to Navy's instruction, the potential increase in energy use is expected to comply with state and local plans and guidelines for renewable energy or energy efficiency. Alternative 4 would result in a less than significant impact to local and state plans for renewable energy and energy efficiency.

Mitigation Measures and Impacts after Mitigation

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, less than significant impacts are expected.

2.10.1.4 Alternative 5 Impacts

Construction

Impacts determinations for utilities and infrastructure under Alternative 5 would be identical to those under Alternative 4 (Section 2.10.1.3). Therefore, Alternative 5 would have less than significant impacts for each of the significance criteria for infrastructure.

Operations

Impact avoidance and minimization measures (design features) would lessen any potential impacts to infrastructure and public utilities to less than significant levels. Significant impacts would not occur for Alternative 5, so no mitigation measures are required. Therefore, less than significant impacts are expected for Alternative 5.

2.10.2 Cumulative Impact Analysis

2.10.2.1 Utilities/Service Systems and Energy (Infrastructure)

Description of Geographic Study Area

The ROI for infrastructure and public utilities includes potentially affected public utilities systems and providers in San Diego County with a focus on the capacities and conveyance infrastructure (such as water supply, sewer treatment, electricity supply and generation mix, natural gas supply, and landfills) in the service area that envelopes the project area and adjacent areas.

Relevant Past, Present, and Future Actions

Table 4.3-2 of the EIS identifies past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative infrastructure effects when combined with the Proposed Action Alternatives. The cumulative projects would result in an increase in utility demand. For example, the Navy Broadway Complex/Manchester Gateway Development Project, The Post, Sports Arena Development, and the Hacienda Heights Apartments cumulative projects are expected to incrementally increase demand for most utility infrastructure and utility systems within the ROI, such as: water, wastewater and sewer, solid waste, electricity, and natural gas. In addition, the identified community and regional plans/programs provide a framework and recommended measures and guidelines to help ensure that future development would have sufficient infrastructure supply to support development demands.

Alternatives 4 and 5

Alternative 4 and to a lesser extent, Alternative 5, would lead to a permanent increase in demand on public utilities within the ROI. Implementation of the alternatives would also result in more energy-efficient structures at OTC. Overall, the identified cumulative projects would increase the demand for water, sewer, electrical, and natural gas use within the ROI. While these projects would result in an increase in demand on utility demand and utility infrastructure, they are most likely to generate utility revenue that could be used to fund any necessary infrastructure upgrades and support maintenance of service to fulfill existing and projected utility obligations.

Some of the proposed cumulative projects would replace existing, energy-poor structures, resulting in more energy-efficient structures. Regional goals of increasing renewable energy sources would retain energy supply but reduce associated carbon emissions. The increased use of clean and renewable sources of energy is also a CAP strategy that can be employed within the ROI. The continuation of water conservation techniques and designs would help minimize increases in water demand.

Energy efficiency, water conservation, and waste reduction are major elements of the Midway-Pacific Highway Community Plan. Section 4.8 of the Community Plan identifies several sustainable design concepts to increase energy and water efficiency, increase on-site energy generation, and reduce waste generation (City of San Diego, 2019d). Thus, overall, implementation of Alternatives 4 and 5 would occur in an area with cumulative projects, plans, and programs committed to planning for the smart and efficient use of infrastructure within the ROI. Therefore, implementation of Alternatives 4 and 5 when combined with the past, present, and reasonably foreseeable future projects would not result in significant cumulative impacts to infrastructure within the ROI.

2.11 Noise

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. The perception and evaluation of sound involves three basic physical characteristics:

- Intensity – the acoustic energy, which is expressed in terms of sound pressure, in dB
- Frequency – the number of cycles per second the air vibrates, in Hertz
- Duration – the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance (see EIS Appendix M). A description of regulatory setting, environmental setting, and assessment methodology are presented in Section 3.13 of the EIS.

2.11.1 Impacts Determination

2.11.1.1 Impacts Summary

Table 2.11-1 presents a summary of impacts related to noise for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.11-1 Impacts Related to Noise

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
XIII. NOISE (NOI-) Would the project:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**X**	-	-	-
b) Generation of excessive groundborne vibration or groundborne noise levels?	-	-	**X**	-
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	-	-	**X**	-

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.11.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for noise are described in Section 3.13.4.1 of the EIS, *Noise*. The No Action Alternative would result in less than significant noise impacts.

2.11.1.3 Alternative 4 Impacts

NOI-a: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Potentially significant impact. As described in Section 3.13 of the EIS, the OTC is within the City of San Diego Midway-Pacific Highway Community Planning Area described as an urbanized community adjacent to Interstate 5 to the east and the Marine Corps Recruit Depot to the south. Existing noise in the vicinity of OTC includes vehicular traffic on Pacific Highway and Interstate 5 as well as aircraft operations at San Diego International Airport. The Health and Human Services Agency Hospital 200 feet west of the northwest corner of OTC Site 1 across Pacific Highway is the nearest noise sensitive receptor, followed by Dewey Elementary School and a residential neighborhood approximately 1,000 feet southwest of OTC Site 2.

Similar to other alternatives, Alternative 4 includes construction of new Navy facilities for NAVWAR on OTC through a public-private development and mixed-use residential, hotel, office, and/or retail development. In addition, Alternative 4 would develop a transit center on OTC as part of a revitalization effort. Potential impacts due to noise associated with construction, repair, renovation, and/or demolition would be periodic over the development stage. Construction activity would generate increased noise levels while equipment operates nearest noise sensitive receptors adjacent OTC that may not be able to be fully mitigated. Given the long 30-year timeframe allowed for construction nearby noise sensitive locations, such as the Veteran's Village, the Health and Human Services Hospital, and a healthcare facility would experience elevated noise levels during extended periods of construction under Alternative 4.

Operations

Less than significant impact. Ongoing operation of the newly constructed mixed-use residential, hotel, office, and/or retail development would not be a significant source of noise and would be consistent with the San Diego Midway-Pacific Highway Community Planning Area guidelines. However, the new development would double vehicular traffic on some streets, which would result in increased traffic noise contours of approximately 3 dB CNEL. This increase would be less than the Federal Highway Administration threshold of 5 to 15 dB defined as a substantial noise increase.

Mitigation Measures and Residual Impacts

Construction would follow all local ordinance and avoid quiet time hours and equipment would utilize appropriate noise suppression equipment, such as mufflers. Building design and layout would account for aircraft and traffic noise levels to achieve appropriate interior noise levels as described in the local community plan.

NOI-b: Generation of excessive ground borne vibration or ground borne noise levels?

Construction

Less than Significant Impacts. Although conventional construction activities may be perceptible, these activities would not be capable of exceeding structural damage thresholds outlined by the Caltrans Transportation and Construction Vibration Guidance (Caltrans, 2020). The City of San Diego Municipal Code prohibits construction between 7 p.m. and 7 a.m. on Mondays through Saturdays and all day on

Sundays and holidays. This minimizes the impact of construction activity and would limit the exposure of noise sensitive receptors to conventional construction during the most sensitive times. In addition, pile driving would not occur during construction. Therefore, construction under Alternative 4 would result in less than significant noise impacts due to excessive ground borne vibration or ground borne noise levels.

Operations

Less than Significant Impacts. The proposed land uses in OTC include residential, hotel, office, and/or retail developments which do not typically generate notable vibration. The proposed transit center would include buses, a light rail trolley, and the Amtrak and COASTER service. The existing Amtrak rails would reside in their current location along Interstate 5 while the station would be moved to within OTC, roughly a quarter mile south of the current Old Town Transit Center location. Noise from buses and light rail trolley would not substantially exceed existing noise levels due to similar noise-generating activities such as vehicular traffic along Pacific Highway and Interstate 5 and existing rail activities. Amtrak operations would not significantly exceed existing rail noise. Therefore, operations under Alternative 4 would result in less than significant noise impacts due to excessive ground borne vibration or ground borne noise levels.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

NOI-c: For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction

Less than Significant Impacts. Most construction activities related to implementation of Alternative 4 would potentially generate short-term noise levels in excess of ambient levels, as discussed under NOI-a. However, no additional excessive noise impacts would result due to construction occurring within 2 miles of San Diego International Airport and safety issues related to construction are discussed in the Public Health and Safety section.

Operations

Less than Significant Impacts. The Midway-Pacific Highway Community Planning Area experiences noise from existing San Diego International Airport ranging from 60 to greater than 65 dBA CNEL. The Airport Land Use Compatibility Plan conditionally allows future mixed-use and/or multi-unit residential uses in areas above the 65-dBA CNEL in locations where community plans have allowed residential. These future residential developments require building construction noise attenuation to reduce noise levels to below 45 dB CNEL on the interior. Typical new construction meeting current energy guidelines often exceeds the required noise level reduction to meet the Airport Land Use Compatibility Plan interior guidelines for noise sensitive uses; therefore, the risk in this instance may be relatively low. Therefore, operations under Alternative 4 would result in less than significant noise impacts due to excessive noise for people residing or working in the project area.

Mitigation Measures and Residual Impacts

Construction would follow all local ordinance and avoid quiet time hours and equipment would utilize appropriate noise suppression equipment, such as mufflers. Building design and layout would account for aircraft and traffic noise levels to achieve appropriate interior noise levels as described in the local community plan.

2.11.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for noise under Alternative 5 would be similar to those under Alternative 4 and would be potentially significant due to the long 30-year construction timeframe.

Mitigation Measures and Residual Impacts

Similar to Alternative 4, construction would follow all local ordinance and avoid quiet time hours and equipment would utilize appropriate noise suppression equipment, such as mufflers. Building design and layout would account for aircraft and traffic noise levels to achieve appropriate interior noise levels as described in the local community plan.

2.11.2 Cumulative Impacts

2.11.2.1 Description of Geographic Study Area

The ROI for noise comprises OTC footprint and areas with noise sensitive land uses in the vicinity of OTC, which includes residential areas, schools, places of worship, and hospitals. The nearest noise sensitive land uses within the ROI are:

- Veteran's Village transitional housing located adjacent OTC Site 1 to the east
- Health and Human Services Agency Hospital located adjacent to the northwest border of OTC Site 1
- Dewey Elementary School and a residential neighborhood located approximately 1,000 feet southwest of OTC Site 2
- several places of worship and a residential neighborhood located 300 feet to the northeast of OTC Site 1, beyond Interstate 5

Aircraft activity at San Diego International Airport and vehicular traffic along Interstate 5 and city streets represent the primary sources of noise within the ROI. Noise levels within the ROI typically are in the 60 and 65 dB CNEL range, as depicted in Figure 3.13-2.

2.11.2.2 Relevant Past, Present, and Future Actions

Table 4.3-2 of the EIS lists the reasonably foreseeable cumulative actions that might interact with Alternatives 4 and 5 and cumulatively affect noise within the ROI. These projects primarily consist of construction and development projects. Management plans such as the San Diego General Plan, the community plans, or regional plans have the potential to shift land use over time and impact the noise environment and sensitive noise receptors. Major projects, such as the expansion of the San Diego International Airport, could result in greater numbers of aircraft operating at San Diego International Airport and an associated increase in aircraft-generated noise within the ROI.

2.11.2.3 Cumulative Impact Analysis

The analysis in Section 3.13 of the EIS indicates that Alternatives 4, and 5 could cause significant noise impacts due construction noise during the extended development schedule. Cumulative noise impacts could generally arise from past, present, or reasonably foreseeable future projects creating noise sensitive land uses in the vicinity of OTC or generating noise that could impact noise sensitive uses at OTC (i.e., residential).

2.11.2.4 Alternatives 4 and 5

Collectively within the ROI, there would be a greater potential for temporary cumulative impacts to the noise environment due to the increase in cumulative projects considered, and the increase in scope of Alternatives 4 and 5.

Operationally, the APM would result in a new permanent noise source within the ROI, if located aboveground. The aboveground option would introduce rail noise on streets that do not currently have rail operations along that road or immediately adjacent. If below ground, most, if not all, of the noise would be indistinguishable within the noise environment. However, the noise generated would be similar to existing rail traffic noise within the ROI. Proposed regional transportation plans aim to reduce the vehicles and correspondingly could result in a decrease in vehicle-generated noise and an increase in the frequency of noise generated by mass transit modes (e.g., buses and trains). Aircraft activity at San Diego International Airport and traffic along Interstate 5 would continue to dominate the noise environment within the ROI (refer to Figure 3.13-2 in the EIS). Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of Alternatives 4 or 5 would not result additional impacts of significant cumulative impacts beyond the potentially significant excessive periodic construction noise associated with Alternatives 4 or 5.

2.12 Geology/Soils and Mineral Resources

Geology, soils, and mineral resources include surface and bedrock materials, orientation of rock units, and unique structures that may contain valuable resources such as mineral deposits, sand and gravel, petroleum reserves, or fossils. Mineral resources can be metallic or non-metallic earth materials and energy deposits that can be extracted for a useful purpose, such as iron ore that can be refined to make steel, gravel that can be used to build roads, geothermal resources, or petroleum and natural gas reserves. Soil refers to unconsolidated and weathered earthen materials overlaying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, liquefaction potential, and erodibility can all determine the ability of the ground to support structures and facilities. A description of regulatory setting and environmental setting are presented in Sections 3.14.1 and 3.14.2 of the EIS, respectively.

2.12.1 Impacts Determination

2.12.1.1 Impacts Summary

Table 2.12-1 presents a summary of impacts related to geology/soils and mineral resources for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.12-1 Impacts Related to Geology/Soils and Mineral Resources

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
VII. GEOLOGY AND SOILS (GEO-) Would the project:	-	-	-	-
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	-	-	-	-
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	-	-	**X**	-
ii. Strong seismic ground shaking?	-	-	**X**	-
iii. Seismic-related ground failure, including liquefaction?	-	-	**X**	-
iv. Landslides?	-	-	**X**	-
b) Result in substantial soil erosion or the loss of topsoil?	-	-	**X**	-
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	-	-	**X**	-
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	-	-	**X**	-
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	-	-	-	**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	-	-	-	**X**
XII. MINERAL RESOURCES (MIN-) Would the project:	-	-	-	-
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	-	-	-	**X**
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	-	-	-	**X**

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.12.1.2 No Action/No Project Alternative Impacts

The impacts of No Action Alternative for geology, soils, and mineral resources are described in Section 3.14.3.1 of the EIS, *Geological Resources*. The No Action Alternative would result in less than significant impacts to geology, soils, and mineral resources. However, operations at OTC would continue in the existing buildings without significant renovations and the buildings would not be updated with required facility seismic upgrades or replaced with buildings meeting modern seismic safety standards. Therefore, the No Action Alternative could result in significant impacts from geologic hazards.

2.12.1.3 Alternative 4 Impacts

GEO-a: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- **i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**
- **ii. Strong seismic ground shaking?**
- **iii. Seismic-related ground failure, including liquefaction?**
- **iv. Landslides?**

Construction

Less than significant impact. Under Alternative 4, new facilities would be constructed for NAVWAR on OTC. Construction would require earthwork and grading.

i. Rupture of a known earthquake fault. Faults directly adjacent to OTC are considered active or potentially active. In particular, the nearby Rose Canyon Fault Zone is known to be an active fault in the area of Old Town, less than a mile from the OTC project site (refer to Figure 3.14-1 in the EIS). In addition, the Spanish Bight Fault may connect with northern segments of the Rose Canyon Fault Zone along an alignment that could transect OTC. Because of the newly identified Alquist-Priolo Earthquake Fault Zone within the southeast portion of OTC Site 1 and the presence of nearby active and potentially active faults, a Faulting, Seismicity, and Geologic Hazards Investigation would need to be conducted to determine whether an active fault is located within OTC. If the investigation identifies an active fault within OTC, a Fault Surface Rupture Displacement Hazard Investigation and a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would also need to be conducted (SANDAG, 2020b). The purpose of the first investigation would be to estimate the fault rupture displacements, while the second investigation would describe the hazard mitigation design alternatives. A probabilistic fault hazard displacement assessment should also be performed to estimate the magnitude of displacement to be addressed in the design of features crossing the fault (SANDAG, 2020b).

If needed, measures identified in the geotechnical investigation would be implemented to minimize associated impacts from rupture of a known earthquake fault. These measures may include that any new construction under Alternative 4 would adhere to required setbacks from any active fault identified during the geotechnical investigation. The Alquist-Priolo Special Studies Zone Act states that no occupied structure shall be built on a trace of a fault that has a well-defined surface expression and is known to be sufficiently active in the Holocene (i.e., within the last 11,700 years). If potentially active faults are identified (with known movement in the Quaternary period, older than 11,700 years) during the geotechnical investigation, a project geologist would recommend setbacks for the planned locations of structures.

ii. Strong seismic ground shaking. Active and potentially active faults within the vicinity of OTC and the San Diego area could result in strong seismically-induced ground motion and associated ground shaking. As discussed above, a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would be prepared to further inform the design of the project. All new structures included as part of Alternative 4 would be designed and constructed to comply with the seismic design criteria identified in the United Facilities Criteria (UFC), the Naval Facilities Engineering Systems Command (NAVFAC) P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Standard seismic engineering design would be used to minimize potential effects of seismically-induced ground movement and severe shaking.

iii. Seismic-related ground failure, including liquefaction. OTC is considered vulnerable to liquefaction due to the presence of relatively shallow groundwater and loose artificial fill, alluvium, estuarine deposits, and bay deposits (SANDAG, 2020b; City of San Diego, 2008b). As discussed above, a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation would be prepared to further inform the design of the project. If needed, measures identified in the geotechnical investigation would be implemented to minimize associated impacts from liquefaction. These measures may include (1) in-situ ground improvement methods (e.g., densification or solidification), (2) transferring of load to underlying bearing layers that are non-liquefiable, or (3) excavation of susceptible soils and replacement with compacted engineered fill (SANDAG, 2014). All new structures included as part of Alternative 4 would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Standard seismic engineering design would be used to minimize potential effects of seismically-induced ground movement such as lateral spreading or liquefaction.

iv. Landslides. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Because the site is flat, there would not be an increased potential for landslides.

Therefore, construction under Alternative 4 would result in less than significant impacts due to rupture of known earthquake faults, ground shaking or failure, liquefaction, or landslides.

Operations

Less than significant impact. There would be no additional disturbance of topography, geology, or soils following construction. As described under construction, the location of facilities, project design, and construction would be based on all engineering recommendations detailed in the Faulting, Seismicity, and Geologic Hazards Investigation; the Geotechnical, Geologic, and Seismic Hazards Impacts Investigation; and the Fault Surface Rupture Displacement Hazard Investigation (if an active fault is identified within OTC) (SANDAG, 2020b). All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Therefore, operations under Alternative 4 would result in less than significant impacts due to rupture of known earthquake faults, ground shaking or failure, liquefaction, or landslides.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

GEO-b: Result in substantial soil erosion or the loss of topsoil?

Construction

Less than significant impact. For construction-related earthwork that could increase the potential for erosion, appropriate erosion control using best management practices (BMPs) would be implemented in accordance with a project-specific construction Stormwater Pollution Prevention Plan and in compliance with coverage under the Construction General Permit. Erosion and sedimentation controls would be monitored and maintained during construction and for 12 months thereafter to ensure stabilization of the site. With implementation of BMPs there would be a minimal, temporary risk of on-site soil erosion during construction under Alternative 4. Therefore, construction under Alternative 4 would result in less than significant impacts due to soil erosion or loss of topsoil.

Operations

Less than significant impact. There would be no additional disturbance of topography or soils following construction. The facility Stormwater Pollution Prevention Plan and associated BMPs would be updated to minimize erosion of soils in compliance with the Navy Waste Discharge Requirement (see Section 2.13.1.3). Therefore, operations under Alternative 4 would result in less than significant impacts due to soil erosion or loss of topsoil.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

GEO-c: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction

Less than significant impact. There would be minimal alteration of existing topography and construction would occur on previously developed surfaces. Because the site is flat there would not be an increased potential for on- or off-site landslides.

Lateral spreading is a liquefaction-related phenomenon in areas of gently sloping and or free face conditions (SANDAG, 2014). Due to the project site being located on relatively flat terrain, the risk of lateral spreading in the project area is considered to be low. However, the susceptibility of the project sites to liquefaction and lateral spreading would need to be determined through a Geotechnical, Geologic, and Seismic Hazards Impacts Investigation. Slopes and free faces planned for this project would need to be designed accounting for the potential of lateral spreading (SANDAG, 2020b). If needed, measures identified in the geotechnical investigation would be implemented to minimize associated impacts from lateral spreading and liquefaction. Measures for lateral spread may include (1) in-situ ground improvement methods (e.g., densification or solidification), (2) designing the foundation to resist horizontal permanent ground displacement, or (3) subsurface barrier walls (SANDAG, 2014). Measures for liquefaction may include (1) in-situ ground improvement methods (e.g., densification or solidification), (2) transferring of load to underlying bearing layers that are non-liquefiable, or (3) excavation of susceptible soils and replacement with compacted engineered fill (SANDAG, 2014). All new structures would be designed and constructed to comply with the seismic design criteria identified in the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California. Standard seismic engineering design would be used to minimize potential effects of lateral spreading and liquefaction.

Large-scale subsidence due to fluid withdrawal (water or oil) would not be an issue because OTC does not overlie an actively pumped groundwater aquifer or an oil field (Wilson Geosciences Inc., 2011). Excavations deeper than 10 to 15 feet are expected to encounter groundwater. The need for dewatering would be determined during project design and informed by the results of the geotechnical investigations. Large-scale dewatering during construction is not recommended due to the potential concerns with environmental remediations and the resulting subsidence (SANDAG, 2020b). If needed, groundwater could be controlled during construction by barrier walls or other engineering designs as recommended by the geotechnical investigation. As a result, potential for impacts related to subsidence would be less than significant.

Compressible soils are materials that are prone to a reduction in volume when subjected to loading. Additional settlement may be triggered when loads from newly constructed facilities are placed directly on top of the ground surface. The impact of compressible soils on deep foundations (such as additional down drag loads) would need to be considered in the design of the deep foundations (SANDAG, 2020b). A geotechnical investigation would be conducted to determine if the artificial fill or deeper soils and sediment deposits at OTC are compressible soils. If needed, measures identified in the geotechnical investigation would be implemented to minimize impacts from compressible soils. These measures may include (1) in-situ densification of compressible soils, (2) transferring of load to underlying non-compressible layers (i.e., through the use of pile or drilled shaft foundations), and (3) surcharging or excavation of compressible soils and replacement with compacted engineered fill (SANDAG, 2014).

Therefore, construction under Alternative 4 would result in less than significant impacts due to unstable geologic units or soils.

Operations

Less than significant impact. There would be no additional disturbance of geologic units or soils following construction. Therefore, operations under Alternative 4 would result in less than significant impacts due to unstable geologic units or soils.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

GEO-d: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Construction

Less than significant impact. Soils in the project area are classified as artificial fill with properties that may include high shrink-swell potential (i.e., expansive soils). Geotechnical investigations performed in the past at OTC Site 1 (Ninyo & Moore Geotechnical and Environmental Sciences Consultants, 2002; Hushmand Associates, Inc., 2014) determined that soils from artificial fill have a high sand content and these are anticipated to have a low expansion potential (SANDAG, 2014). However, a geotechnical investigation would need to be performed to determine the specific soil properties for other areas within OTC Site 1 and OTC Site 2. If needed, measures identified in the geotechnical investigation would be implemented to minimize associated impacts from expansive soils. These measures may include (1) drainage-control devices to limit water infiltration near foundation, (2) excavation of expansive soils and replacement with compacted engineered fill, and (3) support of the new structures on piles that are designed to resist impacts of expansive soils (SANDAG, 2014). Therefore, construction under Alternative 4 would result in less than significant impacts due to expansive soils.

Operations

Less than significant impact. There would be no additional excavation or disturbance of soils following construction. Therefore, operations under Alternative 4 would result in less than significant impacts due to expansive soils.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

GEO-e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Construction and Operations

No impact. The site is currently served by underground sewer lines that flow into the City of San Diego sewer system and wastewater treatment plant. Following construction, wastewater from the site would continue to be served by the City of San Diego sewer and wastewater treatment system. As a result, Alternative 4 would not require the use of a septic system or alternative wastewater disposal system. Therefore, construction and operations under Alternative 4 would result in no impact associated with the capability of soil to support the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

GEO-f: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction

No impact. The area under OTC consists of artificial fill. Artificial fill materials are considered to have no paleontological resource sensitivity because the material has been disturbed and no longer has stratigraphic/geological context (San Diego Natural History Museum, 2013). The alluvial floodplain and marine deposits underlying the artificial fill, which are relatively young in age and/or have a high-energy depositional history, are unlikely to produce unique fossil remains, rarely produce fossil remains of scientific significance, and have low sensitivity for fossils (County of San Diego, 2007). Additionally, there are no unique geologic features at OTC. Therefore, construction under Alternative 4 would result in no impact to paleontological resources or unique geologic features.

Operations

No impact. There would be no additional disturbance of geologic features following construction. Therefore, operations under Alternative 4 would result in no impact to paleontological resources or unique geologic features.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

MIN-a: Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

Construction

No impact. There are no potentially developable mineral resource deposits present at OTC or in the vicinity of the project area (California Department of Conservation, 1996). Therefore, construction under Alternative 4 would result in no impact to mineral resources.

Operations

No impact. There would be no additional disturbance of topography, geology, or soils following construction. Therefore, operations under Alternative 4 would result in no impact to mineral resources.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

MIN-b: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Construction

No impact. There are no potentially developable mineral resource deposits present at OTC or in the vicinity of the project area (California Department of Conservation, 1996). In addition, there are no locally important mineral resource recovery sites identified on OTC or the vicinity. Therefore, construction under Alternative 4 would result in no impact to locally important mineral resources.

Operations

No impact. There would be no additional disturbance of topography, geology, or soils following construction. Therefore, operations under Alternative 4 would result in no impact to locally important mineral resources.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

2.12.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for geology, soils, and mineral resources under Alternative 5 would be similar to those under Alternative 4, but the development scenario for private development would be reduced. The lower density development under Alternative 5 would result in reduced construction impacts compared to Alternative 4. Therefore, construction and operations under Alternative 5 would have no impacts or less than significant impacts for each of the significance criteria for geology, soils, or mineral resources.

Mitigation Measures and Residual Impacts

No impacts or less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

2.12.2 Cumulative Impacts

2.12.2.1 Description of Geographic Study Area

The ROI for geological resources under Alternatives 4 and 5 consists of OTC, the Old Town and Uptown community planning areas, San Diego International Airport, Harbor Island, and the regional plans summarized in Table 4.3-1 of the EIS.

2.12.2.2 Relevant Past, Present, and Future Actions

A majority of the construction projects listed in Tables 4.3-1 and 4.3-2 of the EIS would involve ground disturbance or vegetation removal. As such, they have the potential to cumulatively impact geological resources by disrupting soil surfaces, causing compaction and erosion, or altering topography in the ROI. The projects identified in Tables 4.3-1 and 4.3-2 of the EIS also have the potential to be affected by seismic events.

2.12.2.3 Cumulative Impact Analysis

Impacts to geological resources have the tendency to be site-specific and do not usually accumulate. However, without proper controls, erosion and sediment deposition could potentially migrate off-site and accumulate over time. The analysis presented in Sections 2.1.1.3 and 2.1.1.4 concluded that with the implementation of proper seismic design, soil erosion programs, and a project-specific Stormwater Pollution Prevention Plan with associated BMPs, implementation of Alternatives 4 or 5 would result in less than significant impacts to following significance criteria and cumulative analysis is presented below:

GEO-a: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

ii. **Strong seismic ground shaking?**

iii. **Seismic-related ground failure, including liquefaction?**

iv. **Landslides?**

As described in Sections 2.1.1.3 and 2.1.1.4, the location of facilities, project design, and construction under Alternatives 4 or 5 would be based on engineering recommendations detailed in the Faulting, Seismicity, and Geologic Hazards Investigation; the Geotechnical, Geologic, and Seismic Hazards Impacts Investigation; and the Fault Surface Rupture Displacement Hazard Investigation (if an active fault is identified within the OTC). For many cumulative projects involving new construction, similar geotechnical investigations may also be conducted to determine fault locations and other seismic hazards. Site-specific seismic engineering and design standards would be implemented for Alternatives 4 or 5 and other cumulative projects to minimize impacts from anticipated fault rupture, strong seismic ground shaking, subsequent effects such as liquefaction, and landslides. Specifically, structures would be constructed to comply with all applicable codes and regulations, to include the California Building Code, City of San Diego Municipal Code, the Alquist-Priolo Earthquake Fault Zoning Act, the UFC, the NAVFAC P-355 Seismic Design Manual, and the criteria identified in the latest design specifications of the Structural Engineering Association of California, as applicable. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of Alternatives 4 or 5 would result in less than significant cumulative impacts due to rupture of known earthquake faults, ground shaking or failure, liquefaction, or landslides.

GEO-b: Result in substantial soil erosion or the loss of topsoil?

Construction activities under Alternatives 4 or 5 and nearby cumulative projects would increase soil susceptibility to erosion, compaction, and displacement. For all construction projects that disturb over 1 acre (including Alternatives 4 or 5), appropriate erosion control BMPs would be implemented in accordance with a project-specific construction Stormwater Pollution Prevention Plan, and in compliance with coverage under the Construction General Permit. There would be no additional disturbance of soils following construction and facilities would comply with National Pollutant Discharge Elimination System permit requirements. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of Alternatives 4 or 5 would result in less than significant cumulative impacts due to soil erosion or loss of topsoil.

GEO-c: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction activities under Alternatives 4 or 5 and many nearby cumulative projects that result in minimal alteration of existing topography or are located in relatively flat areas would have a low risk of landslides and lateral spreading. Geotechnical investigations for Alternatives 4 or 5 and individual cumulative projects would consider potential for landslides, lateral spreading, subsidence, liquefaction, or collapse (e.g., form compressible soils). As described in Sections 2.1.1.3 and 2.1.1.4, these projects would implement any measures identified in geotechnical investigations to minimize associated impacts from unstable geologic units or soils. There would be no additional disturbance of geologic units or soils following construction. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of Alternatives 4 or 5 would result in less than significant cumulative impacts due to unstable geologic units or soils.

GEO-d: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Construction activities under Alternatives 4 or 5 and nearby cumulative projects may occur in expansive soils. Geotechnical investigations for Alternatives 4 or 5 and individual cumulative projects would be conducted to determine the specific soil properties at a project site and any recommended measures would be implemented to minimize associated impacts from expansive soils. There would be no additional excavation or disturbance of soils following construction. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of Alternatives 4 or 5 would result in less than significant cumulative impacts due to expansive soils.

2.12.2.4 Other Significance Criteria

As discussed in Sections 2.12.1.3 and 2.12.1.4, Alternatives 4 or 5 would not require the use of a septic system or alternative wastewater disposal system and there are no potentially developable mineral resource deposits, paleontological resources, or agriculturally productive soils at OTC. Therefore, Alternatives 4 or 5 would have no cumulative impact on these resources, and following significance criteria are not evaluated further:

- GEO-e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
- GEO-f: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- MIN-a: Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?
- MIN-b: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

2.13 Hydrology/Water Quality

Hydrology and water quality include groundwater, surface water, and floodplains. Descriptions of the regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.15.1, 3.15.2, and 3.15.3 of the EIS, respectively.

2.13.1 Impacts Determination

This section focuses on activities of the Alternatives 4 and 5 that could have environmental consequences for hydrology and water quality.

2.13.1.1 Impacts Summary

Table 2.13-1 presents a summary of impacts related to hydrology/water quality for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.13-1 Impacts Related to Hydrology/Water Quality

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
X. HYDROLOGY AND WATER QUALITY (WQ-) Would the project:	-	-	-	-
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	-	-	**X**	-
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	-	-	**X**	-
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	-	-	-	-

Criteria	Potentially Significant	Less than Significant with Mitigation	Less than Significant	No Impact
i. result in a substantial erosion or siltation on- or off-site;	-	-	X	-
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	-	-	X	-
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	-	-	X	-
iv. impede or redirect flood flows?	-	-	X	-
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	-	-	-	X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	-	-	-	X

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.13.1.2 No Action/No Project Alternative Impacts

The impacts of the No Action Alternative on hydrology and water quality are discussed in Section 3.15.3.1 of the EIS, *Water Resources*. The No Action Alternative would result in no impacts to hydrology and water quality.

2.13.1.3 Alternative 4 Impacts

WQ-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Less than significant impact. Construction activities associated with Alternative 4 would not generate point source waste streams other than stormwater discharges. However, it is possible that construction activities could require groundwater dewatering, which would generate a need for discharging the dewatering effluent. If required, the Navy would obtain a dewatering permit, and dewatering effluent would be disposed of in accordance with Regional Water Quality Control Board Order R9-2014-0041-Waiver Number 3 (Low Threat Discharge to Land for Short-Term Construction Dewatering).

Construction would be subject to the Construction General Permit (*General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*; SWRCB Order No 2009-0009-DWQ amended 2010-0014-DWQ and by 2012-0006-DWQ, National Pollutant Discharge Elimination System Permit No. CAS000002; SWRCB 2009). The Construction General Permit requires dischargers to ensure that stormwater discharges do not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule, the National Toxics Rule, or the applicable Regional Water Board's Water Quality Control Plan (Basin Plan). Construction would comply with limits specified in the permit, thereby ensuring that construction activities do not violate water quality standards or degrade surface or groundwater quality.

Operations

Less than significant impact. Similar to construction activities, operations would not generate point source waste streams other than stormwater discharges. Stormwater discharges from OTC would be regulated under the Navy's Waste Discharge Requirement permit (Regional Water Quality Control Board Order No. R9-2014-0037, as Amended by Order No. N9-2017-0010, National Pollutant Discharge Elimination System Permit No. CA0109363 – Waste Discharge Requirements for United States Department of the Navy), which would be modified as appropriate to reflect post-construction changes to the stormwater facilities and characteristics of the runoff. Post-construction activities would require adherence to the facility Stormwater Pollution Prevention Plan that includes impact avoidance and minimization measures. By successfully complying with these measures, runoff during post-construction operations would be minimized and treated through low impact development, site design, and/or structural BMPs mandated by these measures. According to Navy (2020a), there have not been any recent notices of violation or non-compliance with the existing stormwater discharge permit. Consolidation of transit on OTC would not adversely affect water resources because construction and operations would comply with the Construction General Permit and Waste Discharge Requirement permit that specify development of plans (stormwater management and stormwater pollution prevention plans), implementation of best available pollutant control technology and BMPs, and monitoring and reporting requirements necessary to meet water quality criteria and protect the beneficial uses of water resources. Therefore, Alternative 4 operations would not violate water quality standards or degrade surface or groundwater quality.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

WQ-b: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction and Operations

Less than significant impact. As noted in Section 3.15.2.1 of the EIS, groundwater is not a source of potable water at OTC, and there are no known drinking water wells within a 1-mile radius of OTC (Navy, 2020b). Further, per the Basin Plan (Regional Water Quality Control Board, 2016), the San Diego Mesa Hydrologic Area that includes OTC has no designated beneficial uses.

Ground-disturbing activities during construction could encounter groundwater and require dewatering. However, the volume of groundwater extracted would be limited and would not affect or deplete groundwater supplies. OTC is almost entirely covered by impervious surfaces, so current infiltration rates and the potential for groundwater recharge are minimal (see Section 3.15.2.1 of the EIS). Post-construction, the portion of the site covered by impervious surfaces is not expected to increase. Low impact development features would be incorporated as part of the sustainable design of new buildings, and these features would promote greater on-site retention of rainfall (decreased runoff volumes). Regardless, this would not represent a substantial change in the groundwater recharge potential for the site.

Therefore, construction and operations of Alternative 4 would not interfere with a source for drinking water or with management of a groundwater resource.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

WQ-c: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- **i. result in substantial erosion or siltation on- or off-site**
- **ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site**
- **iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff**
- **iv. impede or redirect flood flows**

Construction and Operations

Less than significant impact. OTC is relatively flat, and construction and operations of Alternative 4 would not require significant re-grading that would substantially alter runoff flow volumes or new construction with the potential for redirecting drainage patterns. Further, an estimated 95 percent of the OTC presently is covered with an impervious surface (represented by the building footprints, paved parking lots, and access roads) (Regional Water Quality Control Board, 2014). Once constructed, the portion of OTC covered with an impervious surface would be similar to or less than existing conditions. Thus, construction and operations would not increase the amount of impervious surface to an extent that would result in appreciably greater runoff volumes.

There are no surface water features, including streams or creeks, within or adjacent to OTC. Therefore, construction and operations would not alter the course of surface water flows or result in substantial erosion or siltation on- or off-site. Thus, construction and operations of Alternative 4 would not alter drainage patterns, increase flood risks, or promote erosion or siltation.

Mitigation Measures and Residual Impacts

Less than significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

WQ-d: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Construction and Operations

No impact. OTC is not located in a flood zone and is not subject to tsunami or seiche run-up.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

WQ-e: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction and Operations

No impact. As noted previously, OTC is within San Diego Mesa Hydrologic Area (groundwater basin) that has no designated beneficial uses. Construction and operations would not conflict or interfere with a groundwater management plan. As discussed in Section 3.15.2.2 of the EIS, the San Diego River represents receiving waters for stormwater runoff discharges from OTC Site 1. The lower portion of the San Diego River is on the current 303(d) list as an impaired water body. However, stormwater runoff discharges from OTC have not been identified as a contributing source to the impairment. Therefore, construction and operations of Alternative 4 would not conflict with ongoing total maximum daily loads and other water quality plans for the San Diego River. Similarly, San Diego Bay represents receiving waters for stormwater runoff discharges from OTC Site 2, and San Diego Bay is on the current 303(d) list as an impaired water body. Stormwater runoff discharges from OTC have not been identified as a contributing source to the impairment. Therefore, construction and operations of Alternative 4 would not conflict with ongoing total maximum daily loads and other water quality plans for San Diego Bay.

Mitigation Measures and Residual Impacts

No impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

2.13.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for hydrology and water quality under Alternative 5 would be identical to those under Alternative 4 (Section 2.13.1.3). Therefore, Alternative 5 would have no impacts or less than significant impacts for each of the significance criteria for water resources.

Mitigation Measures and Residual Impacts

Impact avoidance and minimization measures (design features such as low impact development) discussed in the EIS would ensure that any potential impacts to water resources would be less than significant. No significant impacts would occur for this criterion, so no mitigation measures are required. Therefore, there would be no residual impacts.

2.13.2 Cumulative Impacts

2.13.2.1 Description of Geographic Study Area

The ROI for water resources includes the surface water and groundwater features that could be subject to direct or indirect effects from implementation of the Proposed Action Alternatives. As discussed in

Section 3.15 of the EIS, *Water Resources*, there are no surface water features within or adjacent to OTC. The closest surface water features to OTC are the San Diego River and San Diego Bay, located approximately 0.5 and 0.75 mile, respectively from OTC. The Proposed Action Alternatives would discharge stormwater runoff via outfalls to the San Diego River and to San Diego Bay; therefore, the lower portions of the San Diego River and San Diego Bay in the vicinity of the Naval Training Center Boat Channel are included in the ROI. The ROI for groundwater resources consists of the portion of the San Diego Mesa Hydrologic Area groundwater basin immediately beneath OTC.

2.13.2.2 Relevant Past, Present, and Future Actions

Relevant past, present, and reasonably foreseeable actions that might interact with the Proposed Action Alternatives to affect water resources are those with the potential to:

- Result in a substantial increase in runoff volumes and/or alterations of drainage patterns that could result in flooding.
- Substantially degrade the quality of surface or receiving waters.
- Reduce supplies or alter beneficial uses of groundwater.

Of the past, present, and reasonably foreseeable actions listed in Tables 4.3-1 and 4.3-2 of the EIS, only those located within the same watershed as OTC would have potential for contributing to cumulative impacts related to runoff volumes or drainage patterns. These cumulative projects include the miscellaneous projects and construction of pre-engineered buildings at OTC; Marine Corps Community Services car wash project at Marine Corps Recruit Depot San Diego; SANDAG transportation projects that traverse the watershed; various Port of San Diego projects; and miscellaneous projects at San Diego International Airport, Liberty Station, and the Sports Arena that are near OTC. All other actions are outside of the watershed and would not affect runoff patterns in the vicinity of OTC.

Similarly, only past, present, and future actions that involve or could involve discharges, including stormwater runoff, to the San Diego River and San Diego Bay would have potential for contributing to cumulative impacts related to surface water quality. These cumulative projects include: City of San Diego community plans and actions; SANDAG transportation projects that traverse the watershed, such as coastal rail improvements; and regional water quality improvement plans and projects, such as the Regional Water Quality Board’s Total Maximum Daily Load for Indicator Bacteria, Project 1 – Twenty Beaches and Creeks in the San Diego Region. Additionally, the San Diego Bay Watershed Water Quality Improvement Plan (City of San Diego, 2016d) was developed to guide responsible parties within the San Diego Bay Watershed toward achieving improved water quality in municipal stormwater discharges as well as improve communication between non-municipal entities within the San Diego Bay Watershed (e.g., the Navy) and the appropriate regulatory agencies to ensure that discharges are appropriately regulated and to improve water quality throughout the San Diego Bay Watershed. Similarly, the Water Quality Improvement Plan for the San Diego River Watershed includes a Jurisdictional Urban Runoff Management Plan that specifies BMPs and monitoring requirements related to improving water quality in the San Diego River.

Groundwater associated with the San Diego Mesa Hydrologic Area that includes OTC has no designated beneficial uses. Thus, it is unlikely that any of the present and future actions would include requirements for extracting or discharge to groundwater with the potential for affecting supplies or altering beneficial uses.

2.13.2.3 Alternatives 4 and 5

Alternatives 4 and 5 would have less than significant impacts or no impact to the significance criteria presented in 2.13.1.1. Alternatives 4 and 5 would not contribute to cumulative changes to violating any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; or substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces.

Current and future development project in the ROI would be required to comply with all National Pollution Discharge Elimination System permit requirements, including the development of a Stormwater Pollution Prevention Plan if the disturbed area covers one acre or more. Compliance with permit conditions, together with implementation and maintenance of BMPs, would result in less than significant cumulative impacts to hydrology/water quality.

2.14 Biological Resources

Biological resources generally include plant and animal species and the habitats in which they occur. Plant associations are generally referred to as *vegetation* and animal species are referred to as *wildlife*. Habitat is defined as the resources and conditions present in an area that support plant and wildlife species. A description of regulatory setting, environmental setting, and assessment methodology are presented in Sections 3.16.1, 3.16.2, and 3.16.3 of the EIS, respectively. This analysis focuses on species that are important to the function of ecosystems, are of special societal importance, or are protected under federal or state law or statute.

2.14.1 Impacts Determination

This section focuses on activities of Alternatives 4 and 5 that could have environmental consequences for biological resources.

2.14.1.1 Impacts Summary

Table 2.14-1 presents a summary of impacts related to biological resources for each criterion specified in CEQA Appendix G Environmental Checklist Form. Explanation of each impact conclusion is provided in the following subsections.

Table 2.14-1 Impacts Related to Biological Resources

Criteria	*Potentially Significant*	*Less than Significant with Mitigation*	*Less than Significant*	*No Impact*
IV. BIOLOGICAL RESOURCES (BIO-) Would the project:	-	-	-	-
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	-	-	**X**	-
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or	-	-	-	**X**

Criteria		Potentially Significant	Less than Significant with Mitigation	Less than Significant	No Impact
	regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	-	-	-	X
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	-	-	X	-
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	-	-	-	X
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	-	-	-	X

Legend: - = no data in cell; X = selection for Alternatives 4 and 5.

2.14.1.2 No Action/No Project Alternative Impacts

The impacts of the No Action Alternative for biological resources are described in Section 3.16.3.1 of the EIS, *Biological Resources*. The No Action Alternative would result in less than significant impacts to biological resources.

2.14.1.3 Alternative 4 Impacts

BIO-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction and Operations

Less than significant impact. As discussed in Section 3.16.2 of the EIS, there is a low likelihood for bird and bat species that are recognized as species of special concern by the California Department of Fish and Wildlife to occur transiently in the project area or to roost/nest in existing structures or buildings. Project design features, including pre-construction roosting/nesting bird and bat surveys, avoidance, and/or exclusion, would limit any potential impacts to wildlife species, including bird and bat species identified as species of special concern by the California Department of Fish and Wildlife. In addition, no federally listed species are known to occur in or utilize the project area, and no potential habitat for federally listed species occurs in the project area (refer to Section 3.16.2 of the EIS). Therefore, under Alternative 4, no federally listed species would be impacted during construction and operations.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

BIO-b: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction and Operations

No impact. No naturally occurring plant communities or habitats occur in the project area (refer to Section 3.16.2 of the EIS). The entire project area is developed, and no natural habitats would be directly or indirectly impacted in or in the vicinity of the project area.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

BIO-c: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Construction and Operations

No impact. No wetlands or other waters occur in the project area, and no wetlands or other waters would be indirectly affected in the vicinity of the project area (refer to Section 3.15.3 of the EIS, *Water Resources*). Although stormwater drainages in the vicinity of OTC discharge to San Diego Bay, coastal waters would not be significantly impacted (refer to Section 3.15.3 of the EIS, *Water Resources*), and the project area does not occur in the coastal zone.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

BIO-d: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Construction and Operations

Less than significant impact. No marine or other aquatic habitats would be directly impacted, and any indirect impacts would be less than significant (refer to Section 3.15.3 of the EIS, *Water Resources*). The project area is completely developed and provides little to no habitat or resources for wildlife species (refer to Section 3.16.2 of the EIS, *Biological Resources*). Therefore, wildlife occurrences within the project area are largely transitory in nature (e.g., bird or bat overflights or small mammals transiting the project area). Project design features, including pre-construction roosting/nesting bird and bat surveys and bat- and bird-friendly building design and standards, would limit any potential impacts to wildlife species during both the construction and operations phases.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

BIO-e: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction and Operations

No impact. The Navy is the sole owner of the project area and there are no local policies or ordinances to protect biological resources in the project area. Thus, there is no conflict with any local policies or ordinances protecting biological resources due to the implementation of Alternative 4.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

BIO-f: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Construction and Operations

No impact. The Navy is the sole owner of the project area and natural resources at Naval Base Point Loma OTC are managed under an existing Integrated Natural Resources Management Plan. Therefore, there would not be a conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

2.14.1.4 Alternative 5 Impacts

Construction and Operations

Impacts determinations for biological resources under Alternative 5 would be identical to those under Alternative 4 (Section 2.14.1.3). Therefore, Alternative 5 would have no impacts or less than significant impacts for each of the significance criteria for biological resources.

Mitigation Measures and Residual Impacts

Significant impacts would not occur for this criterion, so no mitigation measures are required. Therefore, residual impacts are the same as the impacts described above.

2.14.2 Cumulative Impacts

2.14.2.1 Description of Geographic Study Area

The ROI for biological resources includes the OTC and immediately surrounding areas potentially exposed to noise or visual impacts during construction and operations.

2.14.2.2 Relevant Past, Present, and Future Actions

The past, present, and reasonably foreseeable future projects that have the most potential to contribute to cumulative biological resource effects when combined with the Proposed Action Alternatives include the City of San Diego Community Plans and Projects, SANDAG Plans and Projects, Port of San Diego Projects, and Miscellaneous Plans and Projects.

Cumulative Impact Analysis

The analysis presented in Sections 2.14.1.3 and 2.14.1.4 concluded that the combined effects of construction and operations under Alternatives 4 and 5 would not result in significant impacts on biological resources, including special status species. The Proposed Action Alternatives would have no impacts on natural habitats.

2.14.2.3 Alternatives 4 and 5

Alternatives 4 and 5 would have no impacts on or related to natural habitats, habitat fragmentation, or federally listed species. All proposed activities would occur on previously developed land, in a highly urbanized setting. Proposed construction, repair, renovation, and/or demolition activities would result in minimal direct impacts on wildlife species from increased noise, human presence, and night-lighting. Mammal and bird species that may transit the area would likely avoid the project area. The implementation of proposed management practices (Section 3.16.3.7 of the EIS, *Biological Resources*) would further greatly reduce the potential to directly or indirectly impact wildlife, roosting/nesting birds and bats, or special status species, that may occur in or near the project area. The analysis presented above concluded that the combined effects of construction and operations under Alternatives 4 and 5 would not result in significant impacts on biological resources.

Cumulatively, while any project may have the potential to impact individual species and habitat, the overall distribution or abundance of populations and habitats and ecosystem functions and values would not be significantly affected. Other ongoing and reasonably foreseeable construction and infrastructure projects are likely to result in localized habitat loss and minor impacts on biological resources, while project-related restoration/mitigation is likely to offset some past habitat loss and improve habitat for biological resources.

Ongoing and future natural resources management activities on DoD-owned lands and lands administered by the City of San Diego, the Port of San Diego, and other entities would protect and benefit biological resources in the region, including federally listed species, birds protected under the Migratory Bird Treaty Act, and species designated as California species of special concern. Alternatives 4 and 5 in conjunction with the identified cumulative projects may elicit temporary behavioral responses in small numbers of wildlife species; however, species would not be impacted at a population level.

Cumulative biological resources impacts from past, present, and reasonably foreseeable actions within the ROI would be less than significant because those projects that may potentially impact biological resources would implement management practices, mitigation measures, and/or regulatory guidelines to limit impacts to habitats and species. Therefore, implementation of Alternatives 4 or 5, when combined with the past, present, and reasonably foreseeable future projects would not result in significant cumulative impacts to biological resources within the ROI.

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Attachment 1

CAP Consistency Checklist Submittal Application

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CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).[1]

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, State, or federal law.

[1] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

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CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- The Checklist is required only for projects subject to CEQA review.[2]
- If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in Chapter 11: Land Development Procedures of the City's Municipal Code.
- The requirements in the Checklist will be included in the project's conditions of approval.
- The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: Navy Old Town Campus Revitalization

Property Address: 4301 Pacific Hwy, San Diego, CA 92110

Applicant Name/Co.: Naval Information Warfare Systems Command

Contact Phone: ______ Contact Email: ______

Was a consultant retained to complete this checklist? ☐ Yes ☐ No If Yes, complete the following

Consultant Name: ______ Contact Phone: ______

Company Name: ______ Contact Email: ______

Project Information

1. What is the size of the project (acres)? 70.5
2. Identify all applicable proposed land uses:
   - ☐ Residential (indicate # of single-family units): ______
   - ■ Residential (indicate # of multi-family units): 10,000
   - ■ Commercial (total square footage): 1,890,000
   - ☐ Industrial (total square footage): ______
   - ■ Other (describe): Military: 1,064,268 sf office + lab + storage
3. Is the project or a portion of the project located in a Transit Priority Area? ■ Yes ☐ No
4. Provide a brief description of the project proposed:

The proposed project would redevelop the OTC site to contain a NAVWAR footprint and mixed use residential, office, hotel, and retail space and a transit center. The project would include demolition and construction of utilities, facilities, and infrastructure via a public-private development agreement.

[2] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
A. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations?;[3] OR, B. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment, would the proposed amendment result in an increased density within a Transit Priority Area (TPA)[4] and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department?; OR, C. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?	☑	☐

If "***Yes***," proceed to Step 2 of the Checklist. For question B above, complete Step 3. For question C above, provide estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation.

If "***No***," in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

The proposed project satisfies Option B. It would introduce new non-military residential and commercial land uses to the OTC site and therefore would not be consistent with the existing land use plan. The project by itself would consume most the residential growth forecasted in the Midway-Pacific Highway Community Plan, and it would exceed the employment growth forecasted in the Community Plan. The project would include a transit center and would provide mixed-use, high-density development within a TPA. The project would implement CAP Strategy 3 actions.

[3] This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

[4] This category applies to all projects that answered in the affirmative to question 3 on the previous page: Is the project or a portion of the project located in a transit priority area.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.[5] All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the Greenbook (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
1. *Cool/Green Roofs*. • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options? Check "N/A" only if the project does not include a roof component. The project would implement management practice AQ MGMT-6, as described in EIS Section 3.1.5.9: Building construction would include either (1) roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under the 2019 or newer California Green Building Standards Code or (2) a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under the 2019 or newer California Green Building Standards Code.	☑	☐	☐

[5] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits or other permits that do not result in the expansion or enlargement of a building (e.g., decks, garages, etc.), and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

2. *Plumbing fixtures and fittings* With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following: Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity? Nonresidential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)? Check "N/A" only if the project does not include any plumbing fixtures or fittings. The project would implement management practice AQ MGMT-17, as described in EIS Section 3.1.5.9: Residential buildings: (a) Kitchen faucets: maximum flow rate not to exceed 1.5 gpm at 60 psi; (b) Standard dishwashers: 4.25 gal per cycle; (c) Compact dishwashers: 3.5 gal per cycle; and (d) Clothes washers: water factor of 6 gal per cf of drum capacity. Nonresidential buildings: (a) Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 of the California Green Building Standards Code; and (b) Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 of the California Green Building Standards Code.	☑	☐	☐

Strategy 3: Bicycling, Walking, Transit & Land Use			
3. *Electric Vehicle Charging* • Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents? • Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents? • Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use? Check "N/A" only if the project is a single-family project or would not require the provision of listed cabinets, boxes, or enclosures connected to a conduit linking the parking spaces with electrical service, e.g., projects requiring fewer than 10 parking spaces. The project would implement management practice AQ MGMT-22, as described in EIS Section 3.1.5.9: Include at least 50 percent of the total required listed cabinets, boxes, or enclosures with the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use. This measure applies to both residential and nonresidential uses.	☑	☐	☐
Strategy 3: Bicycling, Walking, Transit & Land Use (Complete this section if project includes non-residential or mixed uses)			
4. *Bicycle Parking Spaces* Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?[6] Check "N/A" only if the project is a residential project. The project would implement management practice AQ MGMT-23, as described in EIS Section 3.1.5.9: Provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5) for each nonresidential use.	☑	☐	☐

[6] Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

5. *Shower facilities*

If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table below?

Number of Tenant Occupants (Employees)	Shower/Changing Facilities Required	Two-Tier (12" X 15" X 72") Personal Effects Lockers Required
0-10	0	0
11-50	1 shower stall	2
51-100	1 shower stall	3
101-200	1 shower stall	4
Over 200	1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants	1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants

Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees).

The project would implement management practice AQ MGMT-29, as described in EIS Section 3.1.5.9: Each building that would accommodate over 10 employees would include: (a) 11-50 employees: 1 shower stall and 2 two-tier lockers; (b) 51-100 employees: 1 shower stall and 3 two-tier lockers; (c) 101-200 employees: 1 shower stall and 4 two-tier lockers; and (d) Over 200 employees: 1 shower stall plus 1 additional shower stall for each 200 additional employees, and 1 two-tier locker plus 1 two-tier locker for each 50 additional employees.

☑ ☐ ☐

6. *Designated Parking Spaces*

If the project includes a nonresidential use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table?

Number of Required Parking Spaces	Number of Designated Parking Spaces
0-9	0
10-25	2
26-50	4
51-75	6
76-100	9
101-150	11
151-200	18
201 and over	At least 10% of total

This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements.

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it.

Check "N/A" only if the project is a residential project, or if it does not include nonresidential use in a TPA.

☑ ☐ ☐

The project would implement management practice AQ MGMT-25, as described in EIS Section 3.1.5.9: Provide designated parking for low-emitting, fuel-efficient, and carpool/vanpool vehicles (electric vehicles excluded) for each nonresidential use: (a) 10-25 required spaces: 2 spaces; (b) 26-50 required spaces: 4 spaces; (c) 51-75 required spaces: 6 spaces; (d) 76-100 required spaces: 9 spaces; (e) 101-150 required spaces: 11 spaces; (f) 151-200 required spaces: 18 spaces; (g) >200 required spaces: At least 10% of total. The number of required parking spaces is set by the San Diego Municipal Code.

7. *Transportation Demand Management Program* If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes: At least one of the following components: • Parking cash out program • Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools • Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development And at least three of the following components: • Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees • On-site carsharing vehicle(s) or bikesharing • Flexible or alternative work hours • Telework program • Transit, carpool, and vanpool subsidies • Pre-tax deduction for transit or vanpool fares and bicycle commute costs • Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use? Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees). The project would implement management practice TRANS MGMT-1, as described in EIS Section 3.2.3.9: Implement TDM program to reduce single-occupancy vehicle trips induced by the Proposed Action. TDM involves a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length to help achieve more efficient and sustainable transportation facilities. EIS Appendix E, Section 27 provides a full list of TDM strategies for consideration. The strategies are grouped into the following categories: (a) neighborhood / site enhancements; (b) parking policy / pricing; and (c) commute trip reduction programs.	☑	☐	☐

Step 3: Project CAP Conformance Evaluation (if applicable)

The third step of the CAP consistency review only applies if Step 1 is answered in the affirmative under option B. The purpose of this step is to determine whether a project that is located in a TPA but that includes a land use plan and/or zoning designation amendment is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. In general, a project that would result in a reduction in density inside a TPA would not be consistent with Strategy 3.The following questions must each be answered in the affirmative and fully explained.

1. **Would the proposed project implement the General Plan's City of Villages strategy in an identified Transit Priority Area (TPA) that will result in an increase in the capacity for transit-supportive residential and/or employment densities?**

   Considerations for this question:
   - Does the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities within the TPA?
   - Is the project site suitable to accommodate mixed-use village development, as defined in the General Plan, within the TPA?
   - Does the land use and zoning associated with the project increase the capacity for transit-supportive employment intensities within the TPA?

2. **Would the proposed project implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit?**

   Considerations for this question:
   - Does the proposed project support/incorporate identified transit routes and stops/stations?
   - Does the project include transit priority measures?

3. **Would the proposed project implement pedestrian improvements in Transit Priority Areas to increase walking opportunities?**

   Considerations for this question:
   - Does the proposed project circulation system provide multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries)?
   - Does the proposed project urban design include features for walkability to promote a transit supportive environment?

4. **Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?**

   Considerations for this question:
   - Does the proposed project circulation system include bicycle improvements consistent with the Bicycle Master Plan?
   - Does the overall project circulation system provide a balanced, multimodal, "complete streets" approach to accommodate mobility needs of all users?

5. **Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?**

   Considerations for this question:
   - Does the proposed project include new or expanded urban public spaces such as plazas, pocket parks, or urban greens in the TPA?
   - Does the land use and zoning associated with the proposed project increase the potential for jobs within the TPA?
   - Do the zoning/implementing regulations associated with the proposed project support the efficient use of parking through mechanisms such as: shared parking, parking districts, unbundled parking, reduced parking, paid or time-limited parking, etc.?

6. **Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?**

   Considerations for this question:
   - Does the proposed project provide at least three different species for the primary, secondary and accent trees in order to accommodate varying parkway widths?
   - Does the proposed project include policies or strategies for preserving existing trees?
   - Does the proposed project incorporate tree planting that will contribute to the City's 20% urban canopy tree coverage goal?

Responses to these six questions are attached.

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST
ATTACHMENT A

This attachment provides performance standards for applicable Climate Action Pan (CAP) Consistency Checklist measures.

Table 1 **Roof Design Values for Question 1: Cool/Green Roofs supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan**

Land Use Type	Roof Slope	Minimum 3-Year Aged Solar Reflectance	Thermal Emittance	Solar Reflective Index
Low-Rise Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
High-Rise Residential Buildings, Hotels and Motels	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
Non-Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 residential and non-residential voluntary measures shown in Tables A4.106.5.1 and A5.106.11.2.2, respectively. Roof installation and verification shall occur in accordance with the CALGreen Code.

CALGreen does not include recommended values for low-rise residential buildings with roof slopes of ≤ 2:12 for San Diego's climate zones (7 and 10). Therefore, the values for climate zone 15 that covers Imperial County are adapted here.

Solar Reflectance Index (SRI) equal to or greater than the values specified in this table may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

Table 2	**Fixture Flow Rates for Non-Residential Buildings related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan**
Fixture Type	**Maximum Flow Rate**
Showerheads	1.8 gpm @ 80 psi
Lavatory Faucets	0.35 gpm @60 psi
Kitchen Faucets	1.6 gpm @ 60 psi
Wash Fountains	1.6 [rim space(in.)/20 gpm @ 60 psi]
Metering Faucets	0.18 gallons/cycle
Metering Faucets for Wash Fountains	0.18 [rim space(in.)/20 gpm @ 60 psi]
Gravity Tank-type Water Closets	1.12 gallons/flush
Flushometer Tank Water Closets	1.12 gallons/flush
Flushometer Valve Water Closets	1.12 gallons/flush
Electromechanical Hydraulic Water Closets	1.12 gallons/flush
Urinals	0.5 gallons/flush

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Tables A5.303.2.3.1 and A5.106.11.2.2, respectively. See the California Plumbing Code for definitions of each fixture type.

Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.

Acronyms:
gpm = gallons per minute
psi = pounds per square inch (unit of pressure)
in. = inch

Table 3	Standards for Appliances and Fixtures for Commercial Application related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan	
Appliance/Fixture Type	**Standard**	
Clothes Washers	Maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the *California Code of Regulations.*	
Conveyor-type Dishwashers	0.70 maximum gallons per rack (2.6 L) (High-Temperature)	0.62 maximum gallons per rack (4.4 L) (Chemical)
Door-type Dishwashers	0.95 maximum gallons per rack (3.6 L) (High-Temperature)	1.16 maximum gallons per rack (2.6 L) (Chemical)
Undercounter-type Dishwashers	0.90 maximum gallons per rack (3.4 L) (High-Temperature)	0.98 maximum gallons per rack (3.7 L) (Chemical)
Combination Ovens	Consume no more than 10 gallons per hour (38 L/h) in the full operational mode.	
Commercial Pre-rinse Spray Valves (manufactured on or after January 1, 2006)	Function at equal to or less than 1.6 gallons per minute (0.10 L/s) at 60 psi (414 kPa) and • Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate. • Be equipped with an integral automatic shutoff. • Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gallons per minute (0.08 L/s) or less.	

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Section A5.303.3. See the California Plumbing Code for definitions of each appliance/fixture type.

Acronyms:
L = liter
L/h = liters per hour
L/s = liters per second
psi = pounds per square inch (unit of pressure)
kPa = kilopascal (unit of pressure)

Responses to Step 3: Project CAP Conformance Evaluation

(Responses were obtained from EIS Appendix A, Section 2.1.1.3, Impact GHG-2)

1. Would the proposed project implement the General Plan's City of Villages strategy in an identified TPA that will result in an increase in the capacity for transit-supportive residential and/or employment densities?

Yes. The City defines a "village" as the mixed-use heart of a community where residential, commercial, employment, and civic uses are all present and integrated. The City of Villages strategy focuses growth into mixed-use activity centers that are pedestrian-friendly districts linked to an improved regional transit system. The strategy is designed to sustain the long-term economic, environmental, and social health of the City and its many communities.

OTC Site 1 is the primary land area within the Kurtz District, which the Community Plan has planned as an employment area with military, office, research and development, and complementary residential uses to support and complement the NAVWAR functions. OTC Site 2 is within the Dutch Flats Urban Village, which is planned as an employment and residential-focused urban village. Under existing conditions, all but the easternmost portions of the Kurtz District and Dutch Flats Village are within a TPA (the exception being the area roughly east of Enterprise Street, including the southeast portion of OTC Site 1). By relocating the Old Town Transit Center to OTC Site 1, The proposed project would extend the TPA to cover the currently excluded portions of the Kurtz District and Dutch Flats Village.

The proposed project would provide a transit-oriented mixed-use, high-density development within the Kurtz District and Dutch Flats Urban Village. The development would include transit-supportive residential, hotel, and employment uses close to the relocated transit center. Specifically, the project would construct 10,000 new residential units, 450 new hotel rooms, 1.6 million square feet of new private office and retail space, and 1.1 million square feet of government office, laboratory, and warehouse space within 0.5 mile of the relocated transit center. The traffic study estimated that the mixed-use benefit of the proposed project would result in 6,663 avoided daily trips.

2. Would the proposed project implement the General Plan's Mobility Element in TPAs to increase the use of transit?

Yes. The General Plan's Mobility Element promotes the City of Villages strategy by calling for villages, employment centers, and other higher-intensity uses to be located in areas that can be served by high quality transit services. The proposed project would feature a transit center that provides access to Amtrak, the Coaster, the Trolley, and numerous MTS bus lines. All development would be within 0.5 miles of the relocated transit center. Management practice AQ MGMT-30 would design transit stops to provide convenient access to future residents and workers. AQ MGMT-26 would encourage new multifamily residential uses to provide discounted transit passes to residents. TRANS-MGMT-1 would implement a TDM program to increase the use of transit. Furthermore, the project transportation study recommended an evaluation of the feasibility of providing transit signal priority along four roadway segments near OTC. The transportation study also recommended preparation of a transit mobility plan for the proposed project to maximize the efficiency and attractiveness of transit for future employees and residents.

3. Would the proposed project implement pedestrian improvements in TPAs to increase walking opportunities?

Yes. The proposed project would implement management practice AQ MGMT-27, which would design the project to include a complete, functional, and interconnected pedestrian network. Because project-level planning details are unknown at this time, the specific pedestrian amenities have not been finalized. However, the project transportation study recommended 14 improvements within ½ mile walking distance from the OTC to enhance pedestrian accessibility to adjacent communities. The transportation study also recommended preparation of a pedestrian master plan for the proposed project to guide design and implementation of policies and programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities.

4. Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?

Yes. The goals of the *City of San Diego Bicycle Master Plan* are to (1) make bicycling a viable travel choice, particularly for trips of less than five miles; (2) provide a safe and comprehensive local and regional bikeway network; and (3) produce environmental quality, public health, recreation, and mobility benefits through increased bicycling. The proposed project would implement management practice AQ MGMT-24, which would design the project to include dedicated bicycle lanes that connect to other communities and to the regional bicycle network. Because project-level planning details are unknown at this time, the specific bicycle amenities have not been finalized. However, the transportation study recommended 12 improvements within ½ mile bicycling distance from the OTC to enhance offsite bicycle network connectivity and improve safety. The transportation study also recommended preparation of a bicycle master plan for the proposed project to guide design and implementation of policies and programs to enhance access and mobility around and within the site for bicyclists of all ages and abilities.

5. Would the proposed project incorporate implementation mechanisms that support transit-oriented development?

Yes. The proposed project would construct 10,000 new residential units, 450 new hotel rooms, 1.6 million square feet of new private office and retail space, 1.1 million square feet of government office, laboratory, and warehouse space, and 18 acres of parkland, all within a TPA that is served by the San Diego Trolley, Amtrak, Coaster, and numerous bus lines. As described above in the responses to Questions 1 through 4, The proposed project would include transit, bicycle, and pedestrian improvements to encourage alternative modes of transportation. Management practice TRANS MGMT-1 would implement a TDM program to increase the use of transit.

6. Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?

Yes. One of the primary goals of the City's *Urban Forestry Program* is to increase the City's urban tree canopy cover and maximize the benefits of trees. The CAP set targets of 15 percent urban tree canopy coverage by 2020 and 35 percent by 2035. The proposed project would support the City's goals by planting trees throughout its development. Major streets and pathways within the project site would include trees and other natural amenities to provide shade and create a more inviting pedestrian environment. At this time, it is unknown if the proposed project would satisfy the specific CAP targets for tree canopy coverage. However, management practice AQ MGMT-11 would incorporate sustainable landscapes into the project design, including tree planting, use of drought-tolerant native vegetation, and use of high efficiency irrigation technology.

Appendix B
Relevant Laws and Regulations

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Table B-1 Summary of Relevant Laws and Regulations

Relevant Law or Regulation	*Description*
National Environmental Policy Act (42 U.S.C. sections 4321–4370h)	NEPA is our basic national charter for protection of the environment. It establishes policy, sets goals (section 101), and provides means (section 102) for carrying out the policy. Section 102(2) contains "action-forcing" provisions to make sure that federal agencies act according to the letter and spirit of the Act, including, requirements for environmental analysis of federal actions that have the potential to significantly impact the quality of the human environment.
CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508)	Ensure the implementation of section 102(2) of NEPA. The purpose is to tell federal agencies what they must do to comply with the procedures and achieve the goals of NEPA. The regulations contain procedures to make the NEPA process timely, concise, and useful to decision makers and the public, and to integrate the requirements of NEPA with other planning and environmental review procedures required by law or agency, in order to restore, enhance or minimize impacts to the human environment.
Navy regulations for implementing NEPA (32 CFR part 775)	Ensure the implementation of the procedural provisions of NEPA and the DoD Instruction on Environmental Planning and Analysis and assign responsibilities within the DON for preparation, review and approval of environmental documents prepared under NEPA.
Clean Air Act (42 U.S.C. section 7401 et seq.)	The comprehensive federal law regulating air emissions from stationary and mobile sources. Among other things, this law authorizes USEPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. General conformity is a process required by the Act, established to ensure that actions conducted or sponsored by federal agencies are consistent with air quality goals set by each state to meet the NAAQS. To attain or maintain the NAAQS, each state develops a State Implementation Plan, which includes the strategy and modeling that demonstrates attainment or maintenance, and the various rules, regulations, and programs that provide the necessary air pollutant emissions reductions.
Clean Water Act (33 U.S.C. section 1251 et seq.)	Establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters. The Act makes it unlawful to discharge any pollutant from a point source into navigable waters unless a permit was obtained. Under this Act, the USEPA has implemented pollution control programs such as the National Pollutant Discharge Elimination System permit program, which controls discharges of wastewater and pollutants to surface waters.
Rivers and Harbors Act (33 U.S.C. section 407)	Requires authorization from the Secretary of the Army, acting through the Corps of Engineers, for the construction of any structure in or over any navigable water of the U.S. The law applies to any structure or work that affects the course, location, or condition of the water body and includes any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the U.S. and applies to all structures, from the smallest floating dock to the largest commercial undertaking.
Coastal Zone Management Act (16 U.S.C. section 1451 et seq.)	Provides for the management of the nation's coastal resources, including the Great Lakes and aims to balance competing land and water issues through state and territorial coastal management programs. The Act outlines three national programs, the National Coastal Zone Management Program, the National Estuarine Research Reserve System, and the Coastal and Estuarine Land Conservation Program. The Act is administered by Administered by the National Oceanic and Atmospheric Administration.
Section 438 of the Energy Independence and Security Act	Requires federal agencies to develop facilities having a footprint that exceeds 5,000 square feet in a manner that maintains or restores the pre-development site hydrology to the maximum extent technically feasible. Agencies can meet the pre-development hydrology requirements in two ways: (1) managing on-site the total volume of rainfall from the 95th percentile storm, or (2) managing on-site the total volume of rainfall based on a site-specific hydrologic analysis through various engineering techniques.

Relevant Law or Regulation	*Description*
National Historic Preservation Act (54 U.S.C. section 306108 et seq.)	Requires federal agencies to consider the impact of their actions on historic properties and provide the Advisory Committee on Historic Preservation with an opportunity to comment on projects before implementation. The NHPA requires that agencies assume responsibility for the consequences of their actions on historic properties, are publicly accountable for their decisions, and establish preservation programs.
Endangered Species Act (16 U.S.C. section 1531 et seq.)	Goal of the Act is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of this Act requires action proponents to consult with the USFWS to ensure their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of designated critical habitat.
Migratory Bird Treaty Act (16 U.S.C. section 703–712)	Birds, both migratory and most native-resident bird species, are protected under this Act, and it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture, or kill; or possess migratory birds or their nests or eggs at any time, unless permitted by regulation.
Comprehensive Environmental Response and Liability Act (42 U.S.C. section 9601 et seq.)	Provides a federal "Superfund" to clean up uncontrolled or abandoned hazardous waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. USEPA was given power through this Act to seek out those parties responsible for any release and assure their cooperation in the cleanup in all 50 states and U.S. territories. Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies.
Emergency Planning and Community Right-to-Know Act (42 U.S.C. sections 11001–11050)	Requires each state to appoint a State Emergency Response Commission that divides their states into Emergency Planning Districts and names a Local Emergency Planning Committee for each district comprised of representatives from all elements of the planning process. Enacted to help local communities protect public health, safety, and the environment from chemical hazards, and authorized by Title III of the Superfund Amendments and Reauthorization Act.
Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.)	Gives the USEPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes and enables the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.
Toxic Substances Control Act (15 U.S.C. sections 2601–2629)	Gives the USEPA the authority to require reporting, record-keeping, testing requirements, and restrictions relating to the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon, and lead-based paint.
Sikes Act	Requires the DoD to develop and implement Integrated Natural Resources Management Plans for military installations across the U.S., ensuring ecosystems on military bases are protected and enhanced while allowing the military lands to continue to meet the needs of military operations. The Plans are prepared in cooperation with the USFWS and State fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs.
Noise Control Act of 1972	Established workplace standards for noise. If noise levels exceed standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits. The Act is administered by the Occupational Safety and Health Administration.
EO 11988, Floodplain Management	Requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Relevant Law or Regulation	*Description*
EO 12088, Federal Compliance with Pollution Control Standards	Requires that the head of each Executive agency is responsible for ensuring all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to federal facilities and activities under the control of the agency.
EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	Directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. Also directs each agency to develop a strategy for implementing environmental justice. The purpose of this EO is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.
EO 13045, Protection of Children from Environmental Health Risks and Safety Risks	Requires each federal agency make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.
EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	Directs federal agencies that take actions that either directly or indirectly effect migratory birds, to develop a Memorandum of Understanding and to work with the USFWS and other federal agencies to promote the conservation of migratory bird populations.
EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management	Directs federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.
EO 13175, Consultation and Coordination with Indian Tribal Governments	Applies to rules, policies, and guidance having substantial direct effects on one or more Indian tribes, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes. The agency may not promulgate rules that cause substantial direct compliance costs on Indian tribal governments, and are not required by statute, or that preempt tribal law, unless they provide funds necessary to pay direct compliance costs of the tribal governments or consult with tribal officials early in the process before promulgation and make available to the Office of Management and Budget any written communications from tribal officials.
EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,	Directs the heads of agencies to immediately review agency actions taken between January 20, 2017, and January 20, 2021 that conflict with important national objectives, and to immediately commence work to confront the climate crisis. The EO revokes a number of EOs, including EO 13834 of May 17, 2018 (Efficient Federal Operations), except for sections 6, 7, and 11. Directs the CEQ to rescind its draft guidance entitled, "Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions," 84 Fed. Reg. 30097 (June 26, 2019), and as appropriate and consistent with applicable law, to review, revise, and update its final guidance entitled, "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," 81 Fed. Reg. 51866 (August 5, 2016).
EO 13693, Planning for Federal Sustainability in the Next Decade	Requires federal agencies to achieve: Greenhouse Gas Emissions Reduction and Reporting; Energy Conservation and Renewable Energy; Green Building Performance; Water and Stormwater Management; Fleet Performance; Employee Commuting and Workplace Travel; Facility Resiliency; Sustainable Acquisition; Solid Waste Diversion and Pollution Prevention; Performance Contracting; Electronics Stewardship; and a Strategic Sustainability Performance Plan.

Relevant Law or Regulation	*Description*
EO 14008, Tackling the Climate Crisis at Home and Abroad	EO 14008 amends EO 12898 to create, within the Executive Office of the President, a White House Environmental Justice Interagency Council (Interagency Council) and calls for the Interagency Council to provide recommendations for further updating EO 12898.
OPNAVINST 11010.36C and MCO 11010.16, Air Installations Compatible Use Zone Program	Promotes compatible development near military airfields in order to protect the health, safety, and welfare of people living near the airfield, while preserving the defense flying mission. The Program recommends incorporation of noise contours, accident potential zones, and other safety criteria, into the local land use planning process and provides recommendations for development that is compatible with the air station's mission.

Legend: CEQ = Council on Environmental Quality; CFR = Code of Federal Regulations; DoD = Department of Defense; DON = Department of the Navy; EO = Executive Order; MCO= Marine Corps Order; NEPA = National Environmental Policy Act; NHPA = National Historic Preservation Act; OPNAVINST = Chief of Naval Operations Instruction; PCBs = polychlorinated biphenyls; RCRA = Resource Conservation and Recovery Act; U.S. = United States; U.S.C. = U.S. Code; USEPA = U.S. Environmental Protection Agency; USFWS = U.S. Fish and Wildlife Service.

Table B-2 Summary of Relevant California State Laws and Regulations

Relevant Law or Regulation	*Description*
Alquist-Priolo Earthquake Fault Zoning Act (California Public Resource Code section 2621-2630 1972 amended 1994)	Addresses surface-fault rupture hazard by prohibiting most structures for human occupancy from being placed over the trace of an active fault. The Act established the State Mining and Geology Board and is responsible for the California Geological Survey and fault maps. The State Mining and Geology Board establishes specific regulations to guide lead agencies in implementing the law.
California Building Standards Code (Title 24, California Code of Regulations)	All occupancies in California are subject to national model codes adopted into Title 24, and occupancies are further subject to amendments adopted by state agencies and ordinances implemented by local jurisdictions' governing bodies.
The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, section 2690-2699.6)	Directs the Department of Conservation, California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. Requires the State Geologist to establish regulatory zones and to issue appropriate maps to all affected cities, counties, and state agencies for their use in planning and controlling construction and development.
Porter-Cologne Water Quality Control Act	Requires a person who discharges waste into the waters of the state in violation of waste discharge requirements or other order or prohibition issued by a California regional water quality control board or the State Water Resources Control Board to clean up the waste or to abate the effects of the waste. Authorizes the regional board to expend available moneys to perform any cleanup, abatement, or remedial work required under those circumstances.
California Water Code	Regulates and authorizes water use in the State so that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

Relevant Law or Regulation	***Description***
California Accidental Release Prevention Law	The Law establishes the California Accidental Release Program, with the goal of preventing accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. Requires businesses that handle more than a threshold quantity of a regulated substance listed in the regulations to develop a Risk Management Plan, which is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential.
California Occupational Safety and Health Act	Protects and improves the health and safety of workers in California and the safety of passengers riding on elevators, amusement rides, and tramways. Enforces effective standards, assists, and encourages employers to maintain safe and healthful working conditions, and provides for enforcement, research, information, education, and training in the field of occupational safety and health.
Hazardous Materials Handling and Emergency Response “Waters Bill”	Requires local governments to regulate local businesses' storage of hazardous materials and to be prepared to respond to the possible release of such materials. Handlers of hazardous materials are required to develop and submit a hazardous materials "Business Plan" to local administering agencies, and to report actual and threatened releases of hazardous materials to their local agency and to the state-level Governor's Office of Emergency Services.
California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control Law	Includes codes and statutes related to the testing, treatment, storage, and disposal of hazardous wastes.
Carpenter-Presley-Tanner Hazardous Substance Account Act “State Superfund”	Establishes an extensive and complex series of programs authorizing public agencies to order owners of contaminated property, including "brownfields" to conduct cleanups of the properties. The Act is administered by the State’s Department of Toxic Substances Control.
Hazardous Substances Act (California PRC sections 108100-108515)	Requires manufacturers or importers to classify the hazards of chemicals which they produce or import, and all employers to provide information to their employees about the hazardous chemicals to which they may be exposed, by means of a hazard communication program, labels and other forms of warning, safety data sheets, and information and training. In addition, this section requires distributors to transmit the required information to employers.
California Air Quality Laws	Establishes the California Ambient Air Quality Standards, which are often more stringent than national standards. Ambient air quality standards define ‘clean air’ by setting the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment. The standards are established to protect the health of the most sensitive groups in California.
California Health and Safety Code Section 41700	(a) Except as otherwise provided in Section 41705 , a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. (b) This section shall become operative on January 1, 2014.
In-Use Off-Road Diesel-Fueled Fleets Regulation	CARB regulation: The In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) applies to all self-propelled off-road diesel vehicles 25 horsepower or greater used in California and most two-engine vehicles (except on-road two-engine sweepers). This includes vehicles that are rented or leased (rental or leased fleets).

Relevant Law or Regulation	*Description*
Toxic Air Contaminant Identification and Control Act (AB 1807, Tanner 1983)	Created California's program to reduce exposure to air toxics. The program involves a two-step process: (1) risk identification, and (2) risk management.
Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly)	Requires stationary sources to report the types and quantities of certain substances routinely released into the air.
Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (13 CCR section 2485)	Requires, among other things, that drivers of diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds, including buses and sleeper berth equipped trucks, not idle the vehicle's primary diesel engine longer than five minutes at any location.
Building Energy Efficiency Standards - Title 24	California's energy code is designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings. The California Energy Commission updates the Building Energy Efficiency Standards (Title 24, Parts 6 and 11) every three years by working with stakeholders in a public and transparent process.
Green Building Standards (24 CCR, part 11)	The California Green Building Standards Code, known as CALGreen, is the first-in-the-nation mandatory green building standards code, developed in order to meet the goals of California's landmark initiative AB 32, which established a comprehensive program of cost-effective reductions of GHG to 1990 levels by 2020. The California Building Standards Commission has the authority to propose CALGreen standards for nonresidential structures that include, but are not limited to, new buildings or portions of new buildings, additions and alterations, and all occupancies where no other state agency has the authority to adopt green building standards applicable to those occupancies.
Aboveground Petroleum Storage Act	Regulates non-transportation related facilities with aggregate aboveground petroleum storage capacities of 1,320 gallons or more stored in aboveground storage containers, tanks, oil-filled equipment, or tank in an underground area with petroleum storage capacities of 55 gallons or greater. The California Department of Forestry and Fire Protection Office of the State Fire Marshal has oversight responsibility of the Act.
Underground Storage Tank Law	Protects public health and safety, and the environment from releases of petroleum and other hazardous substances from underground storage tanks through four program elements: Leak Prevention, Cleanup, Enforcement, Tank Tester Licensing. The Law is administered by the California State Water Resources Board.
Solid Waste (Title 27, Environmental Protection, California Code of Regulations, Division 2)	Regulations of CalRecycle and the State Water Resources Control Board pertaining to waste disposal on land, including provisions for the minimization of landfill disposal and recycling and reuse programs.

Legend: AB = Assembly Bill; CARB = California Air Resources Board; CCR = California Code of Regulations; GHG = greenhouse gases; PRC = Public Resources Code.

Table B-3 Department of Defense Polices and Guidance

Relevant Law or Regulation	*Description*
2010 Navy Energy Vision	In this document the Secretary of the Navy set goals to improve energy security, increase energy independence, and reduce the reliance on petroleum by increasing energy efficiency and the use of alternative energy.
SECNAVINST 4101.3A (19 JAN 2017)	Department of Defense Navy Energy Program. Purpose is to establish and implement policy, and to assign responsibility within the DON for the administration and management of the DON energy program.
DoD Instruction 4170.11 (31 AUG 2018)	Installation Energy Management Program. Implements policy established in DoD Instruction 4140.25 (Reference (f)) and provides guidance, assigns responsibilities, and prescribes procedures for DoD installation energy management.
DoD Directive 4715.21 (31 AUG 2018)	Climate Change Adaptation and Resilience. Purpose: In accordance with the direction in Executive Order 13653, this issuance establishes policy and assigns responsibilities to provide the DoD with the resources necessary to assess and manage risks associated with the impacts of climate change. This involves deliberate preparation, close cooperation, and coordinated planning by the DoD to: • Facilitate federal, State, local, tribal, private sector, and nonprofit sector efforts to improve climate preparedness and resilience, and to implement the 2014 DoD Climate Change Adaptation Roadmap. • Help safeguard U.S. economy, infrastructure, environment, and natural resources. • • Provide for the continuity of DoD operations, services, and programs.
DoD Installation Energy (5 DEC 2017)	OSD Energy Resilience Overview; Energy Planning for Military Installations. OASD (Energy, Installations & Environment)

Legend: DoD = Department of Defense; DON = Department of the Navy; SECNAV = Secretary of the Navy; SECNAVINST = SECNAV Instruction; .

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Appendix C

Action Alternatives Development

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FINAL

ACTION ALTERNATIVES DEVELOPMENT TECHNICAL MEMORANDUM

For

NAVY OLD TOWN CAMPUS REVITALIZATION ENVIRONMENTAL IMPACT STATEMENT

At

SAN DIEGO, CALIFORNIA

May 2021

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TABLE OF CONTENTS

List of Tables

Abbreviations and Acronyms

Acronym	Definition
%	percent
CPA	Community Plan Area
EIS	Environmental Impact Statement
EMX	employment mixed-use
FAA	Federal Aviation Administration
FAR	Floor area ratio
HQ	Headquarters
LMA	London Moeder Advisors
MSL	mean sea level
NAVWAR	Naval Information Warfare Systems Command
NEPA	National Environmental Policy Act
NIWC PAC	Naval Information Warfare Center Pacific
NRPEO	Navy Regional Plant Equipment Office
OTC	Old Town Campus
RFI	Request for Information
SANDAG	San Diego Association of Governments
SDIA	San Diego International Airport
SDMC	San Diego Municipal Code
SF	square feet

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1 Alternatives Development Approach

This alternatives development memorandum was prepared to define the development potential on the Old Town Campus (OTC) for a range of alternatives. The revitalization of OTC may be accomplished through Navy recapitalization or a number of public-private development scenarios. As such, no specific site plan has been designed for the OTC. In an effort to facilitate analysis of potential environmental impacts in the Environmental Impact Statement (EIS), a maximum threshold was developed for five different alternatives. This approach is a conservative analysis and should not be considered an exact representation of future development. The final development of the OTC site is subject to many variables outside of the Navy's or a private partner's control, including future market conditions, changes to regulations and other factors. The alternatives were developed using the best available information and are meant to represent an envelope approach to both maximum development and a range of lower intensity development to meet the Naval Information Warfare Systems Command (NAVWAR) purpose and need. Currently OTC is Federal property and is not subject to local zoning or development guidelines. Future revitalization of OTC anticipates the property will remain in Federal ownership and the types and intensities of mixed use development proposed for analysis in the EIS would be allowable under existing law.

2 Alternatives

In addition to the no action alternative, five action alternatives were developed for analysis in the EIS. These include revitalization through Navy capital improvements only, two scenarios of mixed use public-private development, and two scenarios of mixed use public-private development including consideration of a potential transit center. The alternatives are defined as follows:

Alternative 1: NAVWAR-Only Redevelopment

This alternative would consist of modernizing OTC to meet NAVWAR's facility requirements with Navy-funded capital improvements only. This would potentially include consolidating NAVWAR operations into two of the existing buildings on OTC Site 1. The Old Town Campus Recapitalization Plan prepared by Makers Architecture provides additional detail (working draft, 15 January 2020).

Alternative 2: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use

This alternative would consist of construction of new Navy facilities for NAVWAR and mixed use development (e.g., residential, commercial, hotel) on OTC through a public-private development agreement, and the relocation of some warehouse functions to a separate off-site location.

Alternative 3: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use

This alternative would be similar to Alternative 2, but the development scenario for private development would be reduced. The development requirements for NAVWAR would be the same as Alternative 2.

Alternative 4: Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use with a Transit Center

This alternative would be similar to Alternative 2, but the intensity of mixed use development would be increased and a portion of the OTC site would be developed as a transit center. The development requirements for NAVWAR would be the same as Alternative 2.

Alternative 5: Public-Private Redevelopment–NAVWAR and Lower Density Mixed Use with a Transit Center

This alternative would be similar to Alternative 4, but the intensity of mixed use development would be reduced. The development requirements for NAVWAR would be the same as Alternative 2.

3 Limitations / Risks

The major limitations and risks associated with the alternatives development approach utilized can be summarized into a few topics: City of San Diego development review process, Federal Aviation Administration (FAA) / San Diego International Airport (SDIA) review, and programmatic alternatives as described in this section.

3.1 City of San Diego Development Review Process

It is currently unclear if the City of San Diego development review process would apply to the public-private development alternatives (Alternatives 2 through 5). There has been some discussion that the City's process and associated requirements may not apply due to the federal ownership status of the property. The EIS team sees this as more of a limitation associated with the alternatives development process in that there is not clarity on the topic. We believe the risk is relatively low since the City requirements (parking ratios / parkland requirements) are likely more stringent than an alternative process. Since the public-private development alternatives have been developed based on City requirements, they are by default conservative in nature.

3.2 FAA / SDIA Review

Alternative 2 may be the only alternative that could be constructed under the 166-foot above mean sea level threshold for notifying the FAA and submitting the project for review with 14 Code of Federal Regulations Part 77 Imaginary Surfaces and Hazard Assessment. While all the Alternatives have the potential to be constructed under the Part 77 Imaginary Surfaces, they all could be determined to be an obstacle or hazard to smaller general aviation flights departing SDIA that break to the north. Preliminary coordination with SDIA representatives suggests that FAA's main concern is airport efficiency. If FAA determines one or more buildings constructed as part of the OTC project is an obstacle / hazard and requires SDIA to modify the current timing of the north break for departing general aviation flights, SDIA would probably formally oppose the OTC project as changes to the general aviation timing would negatively affect SDIA's overall efficiency and capacity. This potential scenario can be minimized by site layouts that avoid the tallest buildings in the northeastern portion of Site 2.

3.3 Programmatic Alternatives

The inherent programmatic nature of the Alternatives adds a degree of risk to the assessment of impacts associated with each. While the EIS team is using conservative assumptions, applying industry standards, and using professional judgement, there is no guarantee that actual public-private development proposals submitted will be fully covered by the analysis contained within the EIS.

4 Information Sources

To develop the alternatives, several sources of information were utilized to define Navy requirements and Private Development requirements.

4.1 NAVWAR Requirements

The identification of NAVWAR requirements was required for all alternatives. There are two types of development scenario for NAVWAR: Alternative 1, Navy-only development and Alternatives 2 through 5 that include Navy development and mused use public-private development. The Navy-only requirements were taken from the 15 October 2019 Requirements Package provided by NAVWAR as it documents the full requirements for NAVWAR, Naval Information Warfare Center Pacific (NIWC PAC), and Navy Regional Plant Equipment Office (NRPEO) functions currently being conducted at OTC as shown in Table 4.1-1 under 'NAVWAR Recapitalization'.

The Navy requirements associated with the public-private development alternatives (Alternatives 2 through 5) were taken from the 15 November 2019 and 3 February 2020 Requirements Packages provided by NAVWAR. This set of requirements identifies several Navy functions to be relocated from OTC to other locations within the San Diego region to reduce the Navy footprint required for development at OTC. The on-site and off-site requirements are shown in Table 4.1-1. In addition to identifying various functions for relocation to other locations in the region, NAVWAR also reduced their on-site requirements for NAVWAR headquarters (HQ) and NIWC PAC by shifting some expected growth (5.3 percent [%] to 2% for HQ and 2% to 1% for NIWC PAC) in contractor support to the proposed commercial office development as part of the public-private development project, as shown in Table 4.1-1.

Table 4.1-1 Summary of Navy Requirements

Navy Development	*NAVWAR Recapitalization*[1]	*NAVWAR Revitalization (On-site)*	*NAVWAR Revitalization (Off-site)*	*NAVWAR Commercial Demand (Near OTC)*
Office	1,019,364 SF	845,326 SF	3,900 SF	131,464 SF
Laboratory	174,865 SF	165,614 SF	9,251 SF	
Auditorium	12,000 SF	15,000 SF		
Conference Rooms	14,156 SF	14,156 SF		
Warehouse	481,941 SF	24,172 SF	457,769 SF	
Open Storage	174,267 SF		174,267 SF	
Parking	4,541 stalls	2,000 stalls		2,358 stalls

Legend: SF = square feet.
Notes: (1) Requirements under Alternative 1.
(2) Requirements under Alternatives 2 through 5.
Source: Requirements packages from October 2019, November 2019, and February 2020.

To more fully evaluate the potential commercial office space demand associated with NAVWAR contractors a range of growth rates were evaluated, starting with the 2% and 5.3% stated in the 15 November 2019 Requirements Package Attachment A, and adding 7% and 9% rates to capture the upper ranges of potential growth. Table 4.1-2 shows the effects of these rates on the NAVWAR HQ population only from 2019 to 2024 (matches the Requirements Package timeframe) and then from 2025 to 2030. The table shows the potential shortfall of personnel on-site in 2024 (set at 3,083 in the Requirements

Package) for the various growth rates and then converts that to commercial office space requirements at 185 square feet (SF) per worker established within the London Moeder Advisors (LMA) reports, as discussed in more detail in Section 4.3. In 2024, the shortfall could be between 98,000 SF and 225,000 SF. In 2030, the shortfall could be between 72,000 SF and 763,000 SF. To alleviate these shortfalls, the EIS team targeted 250,000 SF as the amount to add to all commercial office space targets.

Table 4.1-2 Summary of Potential Navy Contractor Support Growth

	2% Growth	*5.3% Growth*	*7% Growth*	*9% Growth*
2019 HQ Population	**2,792**	**2,792**	**2,792**	**2,792**
2020 Estimated Population	2,848	2,940	2,987	3,043
2021 Estimated Population	2,905	3,096	3,197	3,317
2022 Estimated Population	2,963	3,260	3,420	3,616
2023 Estimated Population	3,022	3,433	3,660	3,941
2024 Estimated Population	3,083	3,615	3,916	4,296
On-site Personnel Shortfall	**ND**	**532**	**833**	**1,213**
Commercial SF	ND	98,417 SF	154,166 SF	224,450 SF
2025 Estimated Population	3,144	3,806	4,190	4,682
2026 Estimated Population	3,207	4,008	4,483	5,104
2027 Estimated Population	3,271	4,220	4,797	5,563
2028 Estimated Population	3,337	4,444	5,133	6,064
2029 Estimated Population	3,403	4,679	5,492	6,610
2030 Estimated Population	3,472	4,928	5,877	7,205
On-site Personnel Shortfall	**389**	**1,845**	**2,794**	**4,122**
Commercial SF	71,948 SF	341,309 SF	516,918 SF	762,562 SF

Legend: ND = no data; SF = square feet.

4.2 Navy Request for Information Responses

Private development requirements associated with Alternatives 2 and 3 were taken from the Request for Information (RFI) submittals received by the Navy in January 2019. The Navy received eleven responses to the RFI, and two provided a detailed development program for private development as shown in Table 4.2-1.

Table 4.2-1 Summary of Responses to Navy RFI

Private Development	*RFI 1*	*RFI 2*
Residential	2,000-3,600 Units	2,425 Units
Office	450,000 SF	987,700 SF
Hotel	250 Rooms	480 Rooms
Retail	300,000 SF	314,125 SF
Warehouse	275,000 SF	ND
Parking	4,500 stalls	ND

Legend: ND = no data; RFI = Request for Information; SF = square feet.
Source: RFIs received January 2019.

4.3 SANDAG Transit Center

The San Diego Association of Governments (SANDAG) initially identified OTC as a potential site for a Transit Center by submitting an RFI to the Navy. The OTC site was formally included in the 1 October 2019 Airport Connectivity Analysis report as an additional site to consider for a Central Mobility Hub with connectivity to/from the SDIA. For SANDAG to determine if OTC is the preferred location for the

Mobility Hub, it is conducting a separate parallel planning and design process to develop a SANDAG-supported public-private development project for OTC. As part of SANDAG's effort, they have contracted with LMA to conduct a Development Opportunity and Market Analyses for the OTC site with the Central Mobility Hub as a project element. The report provides market analyses for apartment rentals (residential), office, retail, and hotel.

The residential market analysis begins with a supply analysis based on a defined primary market area that includes East Village, Little Italy, and Mission Valley, all of which contain a competitive set of apartment projects. These projects were used to analyze the percent composition of studio, 1-bedroom, 2-bedroom, and 3-bedroom units and recommend a unit-mix for the OTC site as shown in Table 4.3-1. The report also discusses occupancy rates and rental rates that are less relevant to the formulation of alternatives for the EIS.

Table 4.3-1 Supply Analysis of Residential Unit Mix and Recommendation

Unit Type / Area	*East Village*	*Little Italy*	*Mission Valley*	*Recommendation*
Studio	20.4% / 757 Units	21.0% / 185 Units	6.5% / 80 Units	10-20%
1-bedroom	44/9% / 1,663 Units	49.2% / 434 Units	43.4% / 531 Units	30-45%
2-bedroom	25.6% / 949 Units	22.8% / 201 Units	43.8% / 536 Units	35-55%
3-bedroom	2.4% / 87 Units	3.2% / 28 Units	3.3% / 40 Units	0-5%

Source: LMA February 2020 Draft Report.

The residential market analysis also includes a demand analysis based on SANDAG's Central San Diego, Peninsula, and Mission Valley planning areas. SANDAG projects 43,726 additional multifamily units will be needed in those three planning areas from 2020 to 2040 as shown in Table 4.3-2. The table also shows the recommended low and high capture rate for the OTC site with the Transit Center included.

Table 4.3-2 Demand Analysis for Residential Units and Recommendation

Planning Area	*2020*	*2040*	*Growth*
Central San Diego	66,008	97,418	31,410
Mission Valley	13,004	18,388	5,384
Peninsula	12,390	19,322	6,932
Total	91,402	135,128	43,726
Recommended Low Units	ND	ND	8,000
Recommended Low %	ND	ND	18.3%
Recommended High Units	ND	ND	10,000
Recommended High %	ND	ND	22.9%

Legend: ND = no data in cell; % = percent
Source: LMA February 2020 Draft Report.

The office market analysis provides an overall County of San Diego analysis, as well as focus studies on Downtown and Mission Valley. For each area a 20-year historical inventory and asking rent is provided, as well as absorption rate, vacancy rate, and known future supply for all office and Class A. While this information is useful for determining the potential financial aspect of office space at OTC, it does not directly affect the development of EIS alternatives.

The office market analysis also includes a demand forecast for employment growth from 2020 to 2050 based on SANDAG data. The report provides a county-wide analysis of jobs by sector to determine the number of forecasted new jobs per year. This value is multiplied by 185 SF per person as an average size for a modern office space. The same analysis is applied to the forecasts for Downtown and Mission

Valley as these would be the areas OTC would draw from. The results identify a cumulative demand for new office space based on employment growth and identifies a range of potential capture the OTC project could obtain and recommends the 30% Capture rate as shown in Table 4.3-3. The report also analyzes the historic market capture rate for Downtown (11.5%) and Mission Valley (6.2%) as a percentage of the County as a whole. These are used to identify total demand values for Downtown and Mission Valley, and the same capture rate analysis was applied as shown in the table.

Table 4.3-3 Demand Analysis for Office Space and Recommendation

Demand	*Employment Growth*	*Market Capture*
Office Demand Downtown	1,520,633 SF	2,473,183 SF
Office Demand Mission Valley	424,868 SF	1,340,131 SF
40% Capture	778,200 SF	1,525,326 SF
30% Capture	583,650 SF	1,143,994 SF
20% Capture	389,100 SF	762,663 SF
Recommendation	583,650 SF	1,143,994 SF

Source: LMA February 2020 Draft Report.

The retail market analysis begins with a supply analysis for the County of San Diego, as well as focus studies on Downtown and Mission Valley. For each area a 15-year historical inventory and asking rent is provided, as well as absorption rate, and vacancy rate. While this information is useful for determining the potential financial aspect of office space at OTC, it does not directly affect the development of EIS alternatives.

The retail market demand analysis focuses on three contributing elements: residents, office workers, and visitor / passenger foot traffic.

To evaluate the potential contribution from future residents, Downtown's East Village neighborhood was used as a model. The average annual household income was determined to be $99,383. LMA also utilized data from the U.S. Economic Census that estimated 43.03% of household income is spent on retail expenditures. They reviewed the categories of expenditures in more detailed and identified those that could more likely happen within a neighborhood / community retail setting, such as that envisioned at OTC. This reduced the value to 31.3% of income as total and the capture rate for OTC was assumed to be 20%. Based on the previously recommended 8,000-10,000 residential units, the potential retail expenditures captured at OTC would be $48.5 - $60.6 million as shown in Table 4.3-4.

To evaluate the potential contribution from future office workers, LMA estimated the population associated with the proposed commercial office space (185 SF / worker) and the NAVWAR office space (225 SF / worker) to be between 7,656 and 10,685 employees. The average daily (260 days / yr) expenditure is estimated at $20 and the capture rate for OTC was assumed to be 20%. The potential retail expenditures captured at OTC would be $8.0 - $11.1 million as shown in Table 4.3-4.

To evaluate the potential contribution from future visitors / passengers, LMA estimated the daily population associated with transit use, airport connections, Navy visitors, hotel guests, and shopping visitors at 54,350 / day. This translates (people / day * 5.5 business days / week * 52 weeks) to an annual visitor / passenger population of 15,544,100. The average daily expenditure is estimated at $10 and the capture rate for OTC was assumed to be 5%. The potential retail expenditures captured at OTC would be approximately $7.8 million as shown in Table 4.3-4.

Table 4.3-4 Demand Analysis for Retail Space and Recommendation

Average Annual Income	$99,383	ND
% of Income spent in Neighborhood / Community Retail	31.3%	ND
% of Residential Retail Capture	20%	ND
Average Office Worker Daily Expenditure	$20	ND
% of Office Worker Retail Capture	20%	ND
Average Visitor/Passenger Daily Expenditure	$10	ND
% of Visitor/Passenger Retail Capture	5%	ND
Low Sales / SF	$400	ND
High Sales / SF	$500	ND
Total Units / Households	8,000	10,000
Total Annual Income	$796,064,000	$993,830,000
Neighborhood / Community Retail Expenditures	$242,270,732	$302,838,415
OTC Site Capture	**$48,454,146**	**$60,567,683**
Office Worker Population	7,656	10,685
Annual Office Worker Expenditures	$39,811,200	$55,562,000
OTC Site Capture	**$7,962,240**	**$11,112,400**
Daily Visitors / Passengers	54,350	54,350
Annual Visitors / Passengers	15,544,100	15,544,100
Visitor / Passenger Retail Expenditures	$155,441,000	$155,441,000
OTC Site Capture	**$7,772,050**	**$7,772,050**
Total OTC Retail Capture	**$64,188,436**	**$79,452,133**
Low Sales Total SF	160,471	198,630
High Sales Total SF	126,377	158,904

Legend: ND = no data in cell; % = percent; SF = square feet.
Source: LMA February 2020 Draft Report.

The hotel market analysis focused on two types of hotels: Limited Service and Boutique.

For the limited service hotel, seven hotels in Mission Valley were used as a competitive set and for the boutique hotel, 12 hotels in Downtown were used as a competitive set. Statistics on number of rooms, available room nights, average daily rates, revenue per available room, and occupancy rates were provided over a 10-yr period. While this information is useful for determining the potential financial aspect of hotel rooms at OTC, it does not directly affect the development of EIS alternatives. No summary tables of recommended rooms by hotel type were provided in the body of report.

The LMA summarizes the development recommendations for a Low Scenario and High Scenario as shown in Table 4.3-5.

Table 4.3-5 Summary of Land Use Recommendations with SANDAG Mobility Hub

Mobility Hub / Private Development	***Low Scenario***	***High Scenario***
Residential	8,000 Units	10,000 Units
Office	557,000 SF	1,100,000 SF
Hotel	200 Rm Limited Service and 250 Rm Boutique	200 Rm Limited Service and 250 Rm Boutique
Retail	120,000-160,000 SF	160,000-200,000 SF

Legend: Rm = room; SF = square feet.
Source: LMA February 2020 Draft Report.

5 Development Alternatives

To cover the full range of potential development intensities at the OTC, five future development scenarios have been developed as shown in Table 5.1-1.

Table 5.1-1 Summary of On-Site Development Alternatives

Development Type	*Alternative 1 - Navy Recapitalization*	*Alternative 2 – Highest Intensity w/o Transit Center*	*Alternative 3 – Lowest Intensity w/o Transit Center*	*Alternative 4 – Highest Intensity w/ Transit Center*	*Alternative 5 – Lowest Intensity w/ Transit Center*
NAVWAR Redevelopment	**Total SF / Equivalent Unit**				
Office	1,019,364 SF	845,326 SF	845,326 SF	845,326 SF	845,326 SF
Laboratory	174,865 SF	165,614 SF	165,614 SF	165,614 SF	165,614 SF
Auditorium	12,000 SF	15,000 SF	15,000 SF	15,000 SF	15,000 SF
Conference Rooms	14,156 SF	14,156 SF	14,156 SF	14,156 SF	14,156 SF
Warehouse	481,941 SF	24,172 SF	24,172 SF	24,172 SF	24,172 SF
Open Storage	174,267 SF	NI	NI	NI	NI
Parking	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	2,000 stalls / 630,000 SF
Mixed-Use Development	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**	**Total SF / Equivalent Unit**
Residential	NI	6,600 Units / 6,336,000 SF	4,400 Units / 4,224,000 SF	10,000 Units / 9,600,000 SF	8,000 Units / 7,680,000 SF
Hotel	NI	400 Rooms / 260,000 SF	250 Rooms / 160,000 SF	450 Rooms / 290,000 SF	450 Rooms / 290,000 SF
Office	NI	1,000,000 SF	650,000 SF	1,350,000 SF	850,000 SF
Retail	NI	180,000 SF	130,000 SF	250,000 SF	200,000 SF
Transit Center	NI	NI	NI	140,000 SF	140,000 SF
Parking	NI	11,782 stalls / 4,123,700 SF	7,834 stalls / 2,741,900 SF	18,536 stalls / 6,487,600 SF	14,801 stalls / 5,180,350 SF
Alternative Total SF	**3,307,008 SF**	**13,593,968 SF**	**9,600,168 SF**	**19,811,868 SF**	**16,034,618 SF**

Legend: NI = not included in this alternative; SF = square feet.

5.1 Navy Recapitalization Plan

The lowest intensity alternative is a Navy-only 'Recapitalization Plan' as presented in Table 5.1-1 as Alternative 1. It utilizes the initial Navy requirements package from October 2019 which assumes all existing functions remain at OTC, no reductions in the parking requirement occurs, and no private or other public development is added to the site. The overall development footprint is about 3.31 million square feet.

5.2 Basis of Alternatives 2 through 5

All of the public-private development alternatives have been based in part on information identified in the LMA market analyses report described in Section 4.3. Two adjustments / corrections were made to the LMA retail analysis: 1) the estimate neighborhood / community retail expenditure percentage reported on 31.3% did not match the numeric calculation in the table, which was 30.5%. This lower percentage was utilized; and 2) the NAVWAR office worker population was estimated at 4,501, which is erroneous and the population from the November 2019 Requirements Package of 5,397 was used instead.

5.3 Public-Private Development without a Transit Center

Alternatives 2 and 3 establish the lowest development intensity and highest development intensity anticipated to be viable without a transit center. Both utilize the final Navy requirements package from November 2019 which assumes some functions (mainly warehouse and open storage) are moved off-site and the parking requirement is reduced by 56% to 2,000 stalls.

The lowest intensity public-private development alternative without the transit center is Alternative 3, as presented in Table 5.1-1. It uses a 10% demand capture for residential units at 4,400; office space at 20% of employment growth plus the 250,000 SF NAVWAR addition for 650,000 SF; and a single limited service hotel with 250 rooms. The LMA retail analysis was conducted based on the residential units and commercial office space values identified. The results were a range from about 87,000 to 109,000 SF. A 20% contingency was added for a target of 130,000 SF. The overall development footprint is about 9.6 million square feet.

The highest intensity public-private development alternative without the transit center is Alternative 2, as presented in Table 5.1-1. It uses a 15% demand capture for residential units at 6,600; office space at 20% of market capture plus the 250,000 SF NAVWAR addition for 1,000,000 SF; and a limited service hotel with 250 rooms plus a boutique hotel with 150 rooms. The LMA retail analysis was conducted based on the residential units and commercial office space values identified. The results were a range from about 118,000 to 147,000 SF. A 20% contingency was added for a target of 180,000 SF. The overall development footprint is approximately 13.6 million square feet.

5.4 Public-Private Development with a Transit Center

Alternatives 4 and 5 establish the lowest development intensity and highest development intensity anticipated to be viable with the inclusion of a transit center. Both utilize the final Navy requirements package from November 2019 which assumes some functions (mainly warehouse and open storage) are moved off-site and the parking requirement is reduced by 56% to 2,000 stalls.

The lowest intensity public-private development alternative with the transit center is Alternative 5, as presented in Table 5.1-1. It uses a 18% demand capture for residential units at 8,000; office space at 30% of employment growth plus the 250,000 SF NAVWAR addition for 850,000 SF; and a limited service hotel with 250 rooms plus a boutique hotel with 200 rooms. The LMA retail analysis was conducted based on the residential units and commercial office space values identified. The results were a range from about 133,000 to 166,000 SF. A 20% contingency was added for a target of 200,000 SF. The overall development footprint is about 16.0 million square feet.

The highest intensity public-private development alternative with the transit center is Alternative 4, as presented in Table 5.1-1. It uses a 23% demand capture for residential units at 10,000; office space at 30% of market capture plus the 250,000 SF NAVWAR addition for 1,350,000 SF; and a limited service hotel with 250 rooms plus a boutique hotel with 200 rooms. The LMA retail analysis was conducted based on the residential units and commercial office space values identified. The results were a range from about 163,000 to 204,000 SF. A 20% contingency was added for a target of 250,000 SF. The overall development footprint is about 19.8 million square feet.

5.5 Revitalization Timeline

Revitalization of the OTC property is proposed to be implemented over a 30-year period, utilizing a phased development approach. The intent would be to revitalize the property in stages with flexibility to accommodate market conditions. In all cases, the NAVWAR requirements would be constructed first, over a period of 5 years. Phasing over the remaining 25 years would fluctuate based on a variety of development and real estate factors. In general, the EIS team assumed 30% of the site would be developed by 2030 with full build out accomplished by 2050.

5.6 Use Calculations for Public-Private Development Uses

To develop a comparable range of alternatives for the EIS, a set of standardized calculations were required for the residential, hotel, office, and parking requirement aspects of the alternatives.

5.6.1 Residential

The RFI submittals presented the residential estimates as a total number of units. No information was provided on the mix of unit types or total footprint. As part of the SANDAG design development effort, their consulting team provided an estimate of the total footprint in SF required for the number of units being proposed. The average unit size is 960 SF per unit. This standard size was applied to the number of units within the public-private development alternatives to determine a total footprint of residential development.

5.6.2 Hotel

The RFI submittals presented the hotel estimates as a total number of rooms. No information was provided on the mix of room types or total footprint. As part of the SANDAG design development effort, their consulting team provided an estimate of the total footprint in SF required for the number of rooms being proposed. The average room size ranged from 500 SF per room to 625 SF per room. This square footage includes all aspects of the guest room block including check-in, corridor, elevators, stairways, laundry, and housekeeping storage. The EIS team researched hotel design standards and assumed a luxury hotel with 645 SF per room as the standard. This standard size was applied to the number of rooms within the public-private development alternatives to determine a total footprint of hotel.

Additionally, the RFI submittals provided a high value of 480 rooms, which was 30 rooms higher than the recommendation provided to SANDAG in the LMA report. Based on the more detailed LMA report, the 480-room proposal was reduced to 400 rooms being considered in Alternative 2.

5.6.3 Office

The commercial office portion of the public-private development alternatives was based on the information provided in the LMA report. The report identified that square footage per employee is trending downward, from 220-250 SF to 170-190 SF. They recommended using 185 SF per employee. As described in Section 4.1, an additional 250,000 SF of commercial office space was added to each alternative to capture the shift of NAVWAR HQ contractors being housed within the NAVWAR HQ office building to being required to be near OTC.

5.6.4 Parking

Parking requirements were not addressed in the RFI submittals or in early information from the SANDAG team. The EIS team chose to review the City of San Diego's Municipal Code (SDMC) for input on zoning that is applied to similar non-federal projects and used that information to identify potential parking ratios for each major use.

- The residential parking requirement was calculated at a rate of 1.5 spaces per 1,000 SF of area, which is the mid-point between a studio and a 3-to-4-bedroom unit per Table 142-05C within SDMC Article 2 Chapter 14.
- The office parking requirement was calculated at a rate of 1.5 spaces per 1,000 SF of area which is the minimum required outside a transit area for employment mixed-use (EMX) zones, per Table 142-05E within SDMC Article 2 Chapter 14. The 'outside a transit area' ratio was purposefully utilized instead of the 1.0 ratio for inside a transit area to partially account for the anticipated demand associated with the 56% parking requirement reduction specified by NAVWAR.
- The hotel parking requirement was calculated at a rate of 1.0 spaces per room which is the minimum required within a transit area per Table 142-05G within SDMC Article 2 Chapter 14.
- The retail parking requirement was calculated at a rate of 2.1 spaces per 1,000 SF of area which is the minimum required within a transit area per Table 142-05E within SDMC Article 2 Chapter 14 for zones CN 1-6, CV 1-2, CC 2-4, CC 3-6, CC 4-6, and CC 5-6.

The size of the parking stall was assumed to be 350 SF (8 feet-3 inches wide by 18 feet long, with a 24-foot aisle) per Tables 142-05K and 142-05L within SDMC Article 2 Chapter 14.

The SANDAG team presented parking stall counts and overall parking footprint requirements during the January 2020 coordination meetings. SANDAG's approach differed somewhat in the ratios utilized, and the assumed size of each parking stall (300 SF, or 8 feet wide by 18 feet long, with a 20-foot aisle). The EIS team re-calculated the parking requirements for Alternatives 4 and 5 to be consistent with Alternatives 2 and 3, as the EIS team's approach was more conservative.

The SANDAG team did not provide a parking requirement associated with the Transit Center. To be conservative, the EIS team developed a parking requirement based on an estimate of parking stalls / ridership at the Old Town Trolley Station. There are 430 parking stalls dedicated to the Old Town Trolley Station. Existing ridership of 31,400 per day was taken from the February 2017 Old Town Transit Center fact sheet published by SANDAG for the Mid-Coast project. These values indicate parking is provided for 1.4% of the ridership. This full demand is assumed to be moved into the new Transit Center within the OTC footprint. To estimate future ridership, 25% of the Mid-Coast ridership of 20,000 per day was assumed to get on / off at the new Transit Center. Additionally, the 20,400 per day estimate of ridership to / from SDIA identified in SANDAG's October 2019 Airport Connectivity Analysis was added. This creates a future ridership estimate of 56,800 per day. The EIS team increased the parking ratio to 2.0% of ridership to determine the requirement shown in Table 5.1-1.

6 Urban Form / Volumetric Massing

To translate the information presented in Table 5.1-1 into three-dimensional volumetric forms and associated urban forms, two additional components of development need to be factored in: site circulation and parkland.

6.1 Site Circulation

Site circulation, referring to public or private streets, can comprise a significant portion of a development site. The EIS team has made an initial estimate that 20% of the OTC will be used to improve / modify existing streets or add new public / private streets within the proposed development. The total area of the OTC for the two sites is 70.46 acres; therefore, 20% represents approximately 14.09 acres being dedicated to site circulation. That leaves 56.37 acres for development.

6.2 Parkland

Based on the residential component of Alternatives 2 through 5, additional population will be added to the Midway-Pacific Highway Community Plan Area (CPA), as well as the associated population-based park requirements established within the City's Recreation Element of the General Plan. To determine the potential population being added by the OTC development, the EIS team analyzed demographic information for the Downtown CPA.

The 2016 study 'Downtown San Diego: The Innovation Economy's Next Frontier' by the Downtown San Diego Partnership identified a population density of 1.19 per unit. The 2018 population and housing estimate from SANDAG's Data Surfer tool was downloaded for the Downtown CPA which provided a population of 54,303 within 27,341 housing units for a population density of 2.09 per unit. These were used to determine a low and high population estimate for the alternatives as shown in Table 6.2-1. The household size presented in the LMA report was 1.8, which is with the range the EIS team identified.

From the population estimates, a range of potential population-based parkland could be calculated based on the ratio of 2.80 acres per 1,000 population defined in the Recreation Element. As shown in Table 6.2-1, the potential parkland ranges from a low of 14.66 acres to a high of 58.52 acres.

Table 6.2-1 Population Estimates and Park Requirements

Category	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Residential Units	6,600 Units	4,400 Units	10,000 Units	8,000 Units
Population / Unit – Low	1.19	1.19	1.19	1.19
Population / Unit – High	2.09	2.09	2.09	2.09
Population Estimate – Low	7,854	5,236	11,900	9,520
Population Estimate - High	13,794	9,196	20,900	16,720
Population-based Park Standard	2.80 AC per 1,000	2.80 AC per 1,000	2.80 AC per 1,000	2.80 AC per 1,000
Park Acreage – Low	21.99 AC	14.66 AC	33.32 AC	26.66 AC
Park Acreage - High	38.62 AC	25.75 AC	58.52 AC	46.82 AC

Legend: AC = acres.

6.3 Urban Form

With estimates for site circulation and parkland, an overall evaluation of urban form can be conducted. A basic gross floor area ratio (FAR) can be calculated by dividing the OTC site acreage by the development program for each alternative. When the development programs are converted from square feet to acres, they represent a range from 75.92 to 454.82 acres and gross FARs from 1.08 to 6.45 as shown in Table 6.3-1. This means that for Alternative 1, the entire site would be covered by a 1.08 story building to meet the development program, and Alternative 4 would require a 6.45 story building covering the entire site.

By removing the estimates for site circulation and parkland from the total OTC site, the net developable area can be compared to the proposed development program to determine an overall net FAR for each Alternative. As shown in Table 6.3-1, the net developable area ranges from a high of 56.37 acres for Alternative 1 to a low of -2.15 acres for the high population estimate for Alternative 4. Looking at Alternative 4 closer, the net developable area for the low population estimate is 23.05 acres, meaning the range of parkland requirements can exceed the capacity of the site.

Alternative 3 is estimated to have a FAR of 5.28 - 7.20, which can likely be accommodated with a mix of mid-rise (3 to 5 story) buildings and taller towers for the hotel and some of the office use.

Alternative 2 is estimated to have a FAR of 9.08 - 17.59, which would require a significant portion of the development to be in the form of taller towers for residential, hotel and office. Additionally, the parkland requirements may not be able to be fully met on-site.

Alternative 5 is estimated to have a FAR of 12.39 - 38.54, which means not only will the primary building form be tall towers, but the parkland requirements are not likely to be fully met on-site.

Alternative 4 is estimated to have a FAR of 29.73 or higher, which means the primary building form be tall towers and the parkland requirements will not be able to be fully met on-site.

Table 6.3-1 Floor Area Ratio Estimates

Category	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
OTC Site (SF)	70.46 AC	70.46 AC	70.46 AC	70.46 AC	70.46 AC
Development Program (SF)	3,307,008 SF	13,593,968	9,600,168	19,811,868	16,034,618
Development Program (AC)	75.92 AC	215.61 AC	135.51 AC	464.78 AC	362.51 AC
Gross FAR	1.08	4.43	3.13	6.45	5.22
Site Circulation (20%)	14.09 AC	14.09 AC	14.09 AC	14.09 AC	14.09 AC
Park Acreage - Low	0 AC	21.99 AC	14.66 AC	33.32 AC	26.66 AC
Park Acreage - High	0 AC	38.63 AC	25.75 AC	58.52 AC	46.82 AC
Net Developable Acreage - Low	56.37 AC	34.38 AC	41.71 AC	23.05 AC	29.71 AC
Net Developable Acreage - High	56.37 AC	17.74 AC	30.62 AC	-2.15 AC	9.55 AC
Net FAR - Low	1.35	9.08	5.28	29.73	12.39
Net FAR - High	1.35	17.59	7.20	NA	38.54

Legend: AC = acres; FAR = floor to area ratio; SF = square feet.

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Appendix D

Air Quality Methodology and Calculations

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Acronyms and Abbreviations

AB	Assembly Bill
ATCMs	Airborne Toxic Control Measures
BAU	Business-As-Usual
CAA	Clean Water Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalGreen	California Green Building Standards Code
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DPM	diesel particulate matter
EIS	Environmental Impact Statement
EMFAC	EMission FACtor
EO	Executive Order
EVs	electric vehicles
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutant
HRA	health risk assessment
IPCC	Intergovernmental Panel on Climate Change
LCFS	low carbon fuel standard
MACT	maximum achievable control technology
MSATs	Mobile Source Air Toxics
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAPs	national emission standards for hazardous air pollutants
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
OEHHA	Office of Environmental Health Hazard Assessment
OTC	Old Town Campus
PM	particulate matter

PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
PV	photovoltaic
REL	reference exposure level
RMP	risk management policy
ROG	reactive organic gases
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDAPCD	San Diego Air Pollution Control District
SDG&E	San Diego Gas and Electric
SIPs	State Implementation Plans
SO_2	Sulfur dioxide
SO_x	sulfur oxides
TAC	toxic air contaminant
TOG	total organic gases
U.S.	United States
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound
ZEVs	zero-emission vehicles

Table of Contents

List of Figures

List of Tables

Attachments

1 Applicable Air Quality Regulations

1.1 Federal Regulations

Clean Air Act

The Clean Air Act (CAA) (40 Code of Federal Regulations [CFR] parts 50-99 and 40 CFR parts 1000-1099) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes United States (U.S.) Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The NAAQS are found in 40 CFR part 50 and are shown in Table D-1, shown on the next page.

One of the goals of the CAA was to set and achieve NAAQS in every state by 1975 in order to address the public health and welfare risks posed by certain widespread air pollutants. The setting of these pollutant standards was coupled with directing the states to develop state implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards. The CAA was amended in 1977 and 1990 primarily to set new goals (dates) for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines.

Section 111 of the CAA authorizes USEPA to develop technology-based standards which apply to specific categories of stationary sources. These standards are referred to as New Source Performance Standards (NSPS) and are found in 40 CFR part 60. The NSPS apply to new, modified and reconstructed affected facilities in specific source categories such as manufacturers of glass, cement, rubber tires and wool fiberglass.

Section 112 of CAA addresses national emission standards for hazardous air pollutants (NESHAPs) (40 CFR part 63). Prior to 1990, the CAA established a risk-based program under which only a few standards were developed. The 1990 CAA Amendments revised Section 112 to first require issuance of technology-based standards for major sources and certain area sources. “Major sources” are defined as a stationary source or group of stationary sources that emit or have the potential to emit 10 tons per year or more of a hazardous air pollutant (HAP) or 25 tons per year or more of a combination of HAPs. An “area source” is any stationary source that is not a major source.

For major sources, Section 112 requires that USEPA establish emission standards that require the maximum degree of reduction in emissions of HAPs. These emission standards are commonly referred to as “maximum achievable control technology” or “MACT” standards. Eight years after the technology-based MACT standards are issued for a source category, USEPA is required to review those standards to determine whether any residual risk exists for that source category and, if necessary, revise the standards to address such risk (USEPA, 2020a).

Table D-1 National and California Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 $\mu g/m^3$)		0.070 ppm (137 $\mu g/m^3$)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	12.0 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 $\mu g/m^3$)	Gas Phase Chemiluminescence	100 ppb (188 $\mu g/m^3$)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)		0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 $\mu g/m^3$)	Ultraviolet Fluorescence	75 ppb (196 $\mu g/m^3$)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 $\mu g/m^3$)	
	24 Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 $\mu g/m^3$	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 $\mu g/m^3$ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 $\mu g/m^3$		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 $\mu g/m^3$	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 $\mu g/m^3$)	Gas Chromatography			

See footnotes on next page …

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1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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Source: CARB, 2020b.

State Implementation Plan

A SIP (40 CFR part 51-52) is a collection of regulations and documents used by a state, territory, or local air district to reduce air pollution in areas that do not meet the NAAQS. The San Diego Air Pollution Control District (SDAPCD) is responsible for implementing and enforcing state and federal air quality regulations in San Diego County. In coordination with California Air Resources Board (CARB) and San Diego Association of Governments (SANDAG), the SDAPCD prepares and implements air quality attainment plans for the San Diego County portion of the California SIP.

The ozone portion of the current SIP for San Diego County is titled *2008 Eight-Hour Ozone Attainment Plan for San Diego County* (SDAPCD, 2016a). It addresses the national 8-hour ozone standard of 0.075 parts per million (ppm) established by the USEPA in 2008 (hence the “2008” in the title). It identifies control measures and associated emission reductions needed to demonstrate attainment of the 2008 ozone standard by July 20, 2018. It relies on the SDAPCD’s Regional Air Quality Strategy, described below in Section D1.3, to demonstrate how the region will comply with the national ozone standard. In October 2020, the District Board approved the Final 2020 Plan for Attaining the National Ozone Standards (2020 Ozone Plan) (SDAPCD, 2020). In this plan, the SDAPCD requests that the USEPA re-designate San Diego County to severe nonattainment areas for both the 2008 and 2015 ozone NAAQS to allow more time to bring the region into attainment of these standards. The CARB approved the 2020 Ozone Plan on November 19, 2020 (CARB, 2020a) and submitted it to the USEPA on January 8, 2021 for consideration as a revision to the California SIP for attaining the ozone standards.

General Conformity Rule

CAA Section 176(c), commonly known as the USEPA General Conformity Rule, generally prohibits federal agencies from engaging in, supporting, permitting, or approving any activity that does not conform to the most recent USEPA-approved SIP (40 CFR part 93 subpart B). The General Conformity Rule applies to federal actions located in areas that are in nonattainment of a NAAQS or designated as maintenance areas (attainment areas that have been reclassified from a previous nonattainment status and are required to prepare an air quality maintenance plan). Conformity requirements only apply to criteria pollutants and their precursor emissions. If a conformity applicability analysis shows that the net annual direct and indirect emissions generated by a proposed action would be below *de minimis* thresholds, then the action would be exempt from any further requirements under the General Conformity Rule.

Mobile Source Air Toxics

HAPs emitted from mobile sources are called Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment that are known or suspected to cause cancer or other serious health and environmental effects. In 2001, USEPA issued its first MSAT Rule, which identified 201 compounds as being HAPs that require regulation. A subset of six of the MSAT compounds was identified as having the greatest influence on health and included benzene, butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter (DPM). More recently, USEPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented (40 CFR parts 59, 80, 85, and 86; Federal Register Volume 72, No. 37, pp. 8427–8570, 2007). Unlike the criteria pollutants, there are no NAAQS for benzene and other HAPs. The primary control methodologies for these pollutants for mobile sources involves reducing their content in fuel and altering the engine operating characteristics to reduce the volume of pollutant generated during combustion.

Federal Vehicle Standards for Greenhouse Gases

In 2007, President Bush directed the USEPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce greenhouse gases (GHG) emissions from motor vehicles, nonroad vehicles, and nonroad engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; and in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the same federal agencies to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed Corporate Average Fuel Economy standards for model year 2017–2025 light-duty vehicles. The proposed standards are projected to achieve 163 grams per mile of carbon dioxide (CO_2) in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.

In August 2017, the USEPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022–2025 remain appropriate. In early 2018, the USEPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022–2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in 2018, the USEPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards, covering model years 2021–2026. Compared to maintaining the post-2020 standards now in place, the pending proposal would increase U.S. fuel consumption. California and other states have announced their intent to challenge federal actions that would delay or eliminate GHG reductions. Because the pending proposal is still in the rulemaking phase, and because legal challenges to any future adoption of the proposal is likely, the timing and consequences of the pending proposal are speculative at this time.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.

The implementation of this program was adopted in two phases. Phase 1 was adopted in 2011, which applied to vehicles from model years 2014–2018. This phase was intended to reduce fuel use and GHG emissions from medium- and heavy-duty vehicles, semi-trucks, pickup trucks and vans, and all work trucks and buses. According to USEPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 9 to 23 percent over the 2010 baselines. Phase 2 was adopted in 2016 for medium- and heavy-duty trucks for model years 2018 and beyond. This phase was intended to include technology-advancing standards that substantially reduce GHG emissions and fuel consumption resulting in an ambitious, yet achievable program that will allow manufacturers to meet the applicable standards over time, at reasonable cost, through a mix of different technologies. For semi-trucks, large pickup trucks, vans, and other trucks, Phase 2 standards will be phased in beginning with model year 2021 and culminating with model year 2027. While this regulation focuses on the reduction of GHG emissions, it is anticipated that this regulation would also help reduce criteria air pollutants.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, USEPA and the NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program” (84 Federal Register 51,310 [September 27, 2019]). The Part One Rule revokes California’s authority to set its own greenhouse gas emissions standards and zero-emission vehicle mandates in California. On January 20, 2021, President Biden issued Executive Order (EO) 13990, which ordered the USEPA and NHTSA to consider, by July 2021, publishing for notice and comment a proposed rule suspending, revising, or rescinding the SAFE Vehicles Rule.

Federal Energy Independence and Security Act

The Energy Independence and Security Act of 2007 facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, and promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs”.

1.2 California Regulations

California Ambient Air Quality Standards

In 1959 the California Legislature directed the State Department of Public Health to develop California Ambient Air Quality Standards (CAAQS). The original CAAQS were established in 1962. The CARB was created by the legislature in 1967, and the CAAQS that had been set by the Department of Public Health were subsequently adopted by CARB in 1969. Thus, the CAAQS predate the NAAQS set by USEPA, which was created in 1970, and issued its first NAAQS in 1971. California law continues to mandate CAAQS, although attainment of the NAAQS has precedence over attainment of the CAAQS due to federal penalties for failure to meet federal attainment deadlines. The CAAQS are shown in Table D-1. (CARB, 2020b).

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

In-Use Off-Road Diesel-Fueled Fleets

These regulations reduce DPM and nitrogen oxides (NO_x) emissions from in-use, off-road heavy-duty diesel vehicles in California. Such vehicles typically are used in construction, mining, and industrial operations. The regulations, among other requirements, impose limits on idling; require all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; restrict the adding of older vehicles into fleets; and require fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits).

The requirements and compliance dates of the regulations vary by fleet size. Large fleets have compliance deadlines each year from 2014 through 2023, medium fleets each year from 2017 through 2023, and small fleets each year from 2019 through 2028 (13 California Code of Regulations [CCR] 2449).

In-Use On-Road Diesel-Fueled Fleets

These regulations require diesel trucks and buses to be upgraded to reduce emissions; newer heavier trucks and buses must meet particulate matter (PM) filter requirements; lighter and older heavier trucks must be replaced; and, by January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses, and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.

California Air Toxics Program (Assembly Bill 1807 and Assembly Bill 2588)

The state Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). The California toxic air contaminant (TAC) list identifies more than 700 pollutants, of which carcinogenic and non-carcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state TAC list includes the federal HAPs.

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from stationary air toxics sources; however, AB 2588 does not reduce the quantity of air toxics emissions. Instead, under AB 2588, TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The plan was anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy-Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy-Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There also are several Airborne Toxic Control Measures (ATCMs) that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Airborne Toxic Control Measure for Diesel-Fueled Commercial Motor Vehicle Idling

This ATCM applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. The measure limits idling of trucks to a maximum of 5 minutes, except when the vehicle is queuing (13 CCR 2485). While this

ATCM focuses on the reduction of DPM emissions as a TAC, this regulation would also help reduce criteria air pollutants.

Airborne Toxic Control Measure for Stationary Compression Ignition Engines

This ATCM establishes emission standards and fuel use requirements for new and in-use stationary engines used in non-agricultural prime and emergency back-up applications and for new stationary engines used in agricultural applications (17 CCR 93115). While this ATCM focuses on the reduction of DPM emissions as a TAC, this regulation would also help reduce criteria air pollutants.

Executive Order S-3-05 (Statewide Greenhouse Gases Emission Targets)

In 2005, Governor Schwarzenegger issued EO S-3-05, which identifies statewide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020
- Reduce GHG emissions to 80 percent below 1990 levels by 2050

In response to EO S-3-05, the California Environmental Protection Agency created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (2006 CAT Report; California Environmental Protection Agency, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include, but are not limited to, the reduction of passenger and light-duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology and infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

California Global Warming Solutions Act (Assembly Bill 32)

In response to EO S-3-05, the California Legislature passed AB 32 (Nunez), the California Global Warming Solutions Act of 2006. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. To achieve this reduction mandate, AB 32 requires CARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In 2007, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. CARB's adoption of this limit is in accordance with Health & Safety Code Section 38550, as codified through enactment of AB 32.

Per Health & Safety Code Section 38561(b), CARB also is required to prepare, approve, and amend a scoping plan that identifies and makes recommendations on "direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that [CARB] finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of GHG emissions by 2020".

2008 Scoping Plan

In 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (2008 Scoping Plan) in accordance with Health & Safety Code Section 38561. During the development of the 2008 Scoping Plan, CARB created a planning framework that is comprised of eight emissions sectors: (1) transportation, (2) electricity, (3) commercial and residential, (4) industry, (5) recycling and waste, (6) high global warming potential (GWP) gases, (7) agriculture, and (8) forest net emissions.

The 2008 Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions from the eight emissions sectors to 1990 levels by 2020. In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; (i.e., those emissions that would occur in 2020), absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]) (CARB 2008). For example, in further explaining CARB's BAU methodology, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

To achieve the necessary GHG reductions to meet the 2020 target, CARB developed a series of reduction measures in the Scoping Plan covering a range of sectors and activities. Broadly, the reduction measures can be separated into capped sectors (i.e., covered by the Cap-and-Trade Program discussed below) and uncapped sectors.

Multiple Scoping Plan measures broadly cover emissions associated with new residential and commercial land use development, including, but not limited to, the following:

- Energy Efficiency/Green Buildings. The Scoping Plan highlights the importance of energy efficiency efforts in reducing GHG emissions from residential and commercial development and indicates that zero net energy should be the overarching and unifying concept for energy efficiency.
- Regional Transportation-Related GHG Targets. The Scoping Plan relies on Senate Bill (SB) 375, discussed below, as an important mechanism to reduce mobile GHG emissions by integrating land use planning and transportation planning at the regional and local level.
- Vehicle Emissions. The Scoping Plan relies on various engine, fuel, and other efficiency improvement programs and increasing electrification of the vehicle fleet.
- Cap-and-Trade Program. The Scoping Plan identifies the Cap-and-Trade Program as a lynchpin, overarching strategy for California to reduce GHG emissions. As explained in the Scoping Plan, the program's implementing regulations provide assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions.

In the 2011 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (2011 Final Supplement; CARB, 2011), CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions (CARB, 2011).

2014 First Update to the Scoping Plan

In 2014, CARB adopted the first update to the Scoping Plan titled Climate Change Scoping Plan: Building on the Framework (2014 First Update). The stated purpose of the 2014 First Update is to "highlight […] California's success to date in reducing its GHG emissions and lay […] the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050" (CARB, 2014a). The 2014 First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals (CARB, 2014a).

In conjunction with the 2014 First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB, 2014a). Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The 2014 First Update identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

Based on CARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB, 2014a). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the 2014 First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the Intergovernmental Panel on Climate Change (IPCC). Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15.3 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

Executive Order B-30-15 (2030 Statewide Greenhouse Gas Emission Goal)

This EO, issued by Governor Brown on April 29, 2015, established an interim GHG emission reduction goal for the state of California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This EO also directed all state agencies with jurisdiction over GHG emitting sources to implement measures designed to achieve the new interim 2030 goal as well as the preexisting long-term 2050 goal identified in EO S-3-05. Additionally, this EO directed CARB to update its mandated Scoping Plan to address the 2030 goal.

Senate Bill 32 and Assembly Bill 197

Enacted in 2016, SB 32 (Pavley, 2016) codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

SB 32 was coupled with a companion bill, AB 197 (Garcia, 2016). Designed to improve the transparency of CARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning statewide programs, policies, and investments related to climate change. AB 197 also requires CARB to make certain GHG emissions inventory data publicly available on its web site; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

2017 Climate Change Scoping Plan

In November 2017, CARB released the 2017 Climate Change Scoping Plan Update, The Strategy for Achieving California's 2030 Greenhouse Gas Target (2017 Scoping Plan) (CARB, 2017). The 2017 Scoping Plan identifies strategies that would achieve the 2030 emission reduction target codified by SB 32. Measures under the 2017 Scoping Plan build on existing programs such as the Cap-and-Trade Program, Low Carbon Fuel Standard, Advanced Clean Cars Program, Renewables Portfolio Standard, Sustainable Communities Strategy (SCS), and Short-Lived Climate Pollutant Reduction Strategy.

Cap-and-Trade Program

California's Cap-and-Trade Program (17 CCR 95800–96022) regulates the emissions of large electric power plants, large industrial plants, and fuel distributors (including transportation fuel and natural gas). These sources are responsible for about 85 percent of the state's total GHG emissions inventory (CARB, 2015). In the Cap-and-Trade Program, the state regulates the quantity of emissions by determining in advance, how many allowances to issue—i.e., setting the "cap." Each allowance is essentially a permit issued by the state authorizing a certain quantity of GHG emissions. There are only a finite number of allowances, ensuring that covered entities may only lawfully emit a certain quantity of GHGs. If a covered entity wishes to emit carbon, it must obtain allowances to authorize those emissions.

Importantly, the Cap-and-Trade Program has been designed to provide a firm cap, ensuring that the 2020 statewide emissions limit identified by CARB in the 2008 Scoping Plan will not be exceeded (CARB, 2008). Thus, for the emission sources covered by the Program, which are nearly all of the sources associated with land use development projects, compliance with the AB 32 2020 mandate is assured by the Cap-and-Trade Program.

AB 398 (2017) extended the statutory horizon year of the Cap-and-Trade Program to December 31, 2030, thereby facilitating continued reliance on the Cap-and-Trade Program for purposes of achieving SB 32's 2030 statewide reduction target.

Executive Order B-55-18

In September 2018, Governor Brown signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

In January 2019, CARB held a workshop regarding carbon neutrality in California, during which CARB staff explained that the definitional parameters and meaning of the term *carbon neutrality* are still being explored (CARB, 2019a). CARB intends to hold additional workshops to explore specific topics related to the pursuit of carbon neutrality, engage with other experts in the field and stakeholders, and conduct research to ensure that any path to carbon neutrality balances scientific, economic, and social justice principles.

Renewables Portfolio Standard

As most recently amended by SB 100 (2018), California's Renewables Portfolio Standard requires retail sellers of electric services and local publicly owned electric utilities to increase procurement from eligible renewable energy resources to 50 percent of total retail sales by 2026 and 60 percent of total retail sales by 2030. SB 100 also established a state policy goal to achieve 100 percent renewables by 2045.

California Energy Efficiency Standards (Title 24, Part 6)

Title 24, Part 6 of the CCR is the California Energy Efficiency Standards for Residential and Nonresidential Buildings (also known as the California Energy Code). This code, originally enacted in 1978 in response to legislative mandates, establishes energy efficiency standards for residential and nonresidential buildings to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and to consider new energy efficiency technologies and methodologies as they become available. Incentives in the form of rebates and tax breaks are provided on a sliding scale for buildings achieving energy efficiency above the minimum standards.

The current version of the Energy Code, known as 2016 Title 24, or the 2016 Energy Code, became effective January 1, 2017. The 2016 Energy Code provides mandatory energy efficiency measures as well as voluntary tiers for increased energy efficiency. The California Energy Commission (CEC), in conjunction with the California Public Utilities Commission, has adopted a goal that all new residential and commercial construction achieve zero net energy by 2020 and 2030, respectively.

The next version of the Energy Code, known as the 2019 Energy Code, was adopted May 9, 2018 and became effective on January 1, 2020. The 2019 Energy Code includes provisions for smart residential photovoltaic (PV) systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The new Energy Code aims to reduce energy use in new homes by requiring that all new homes include individual or community solar PV systems or community shared battery storage systems that achieve equivalent time-dependent value energy use reduction. Accounting for solar PV requirements, the CEC's preliminary estimates indicate that homes built consistent with the 2019 Energy Code will result in 53 percent less energy use than those built under the 2016 standards.

California Green Building Standards (California Green Building Standards Code; Title 24, Part 11)

CCR Title 24, Part 11 is the California Green Building Standards. Beginning in 2011, the California Green Building Standards Code (CalGreen) instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial and residential buildings, state-owned buildings, schools, and hospitals. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and nonresidential buildings. Local jurisdictions must enforce the minimum mandatory requirements and may adopt CalGreen with amendments for stricter requirements.

The mandatory standards require:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels
- 65 percent construction and demolition waste diverted from landfills (please note, AB 341 established a 75 percent diversion target)
- inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations

- mandatory inspections of energy systems to ensure optimal working efficiency
- requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particle boards

The voluntary standards require:

- Tier I – 15 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, cool or solar reflective roof; electrical vehicle charging.
- Tier II – 30 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving, 25 percent cement reduction, cool or solar reflective roof, and electrical vehicle charging.

Similar to the compliance reporting procedure described above for demonstrating code compliance under Title 24, Part 6, in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new residential and nonresidential buildings. The water use compliance forms must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

The CARB Scoping Plan includes a Green Building Strategy with the goal of expanding the use of green building practices to reduce the carbon footprint of new and existing buildings. Consistent with CalGreen, the Scoping Plan recognized that GHG reductions would be achieved through buildings that exceed minimum energy efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable materials. California Public Utilities Commission, CEC, and CARB have a shared goal of achieving zero net energy for new construction in California. The key policy timelines include (1) all new residential construction in California will be zero net energy by 2020 and (2) all new commercial construction in California will be zero net energy by 2030. Green building is thus a vehicle to achieve the Scoping Plan's statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

In the Scoping Plan, CARB projects that an additional 26.3 million metric tons of carbon dioxide equivalent (CO_2e) could be reduced through expanded green building standards. However, to avoid any double counting, this reduction is not counted toward the BAU 2020 reduction goal, as most of these reductions are accounted for in the electricity, waste, and water sectors. Because of this, CARB has assigned all emissions reductions that occur because of green building strategies to other sectors for meeting AB 32 requirements but will continue to evaluate and refine the emissions from this sector.

Title 20 Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the CCR. The regulations establish water and energy efficiency standards for both federally regulated appliances and non-federally regulated appliances. The regulations cover numerous categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California.

Senate Bill 375 (Sustainable Communities and Climate Protection Act)

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization relevant to the project area (the SANDAG) to include a SCS in its Regional Transportation Plan (RTP) that, if implemented, will achieve GHG emission reduction targets set by CARB by reducing vehicle miles traveled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities.

Assembly Bill 341 (Solid Waste Diversion)

AB 241 mandates that businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residences with five units or more arrange for recycling services. Businesses can take one or any combination of measures to reuse, recycle, compost, or otherwise divert solid waste from disposal. Additionally, AB 341 mandates that 75 percent of the solid waste generated be reduced, recycled, or composted by 2020.

Senate Bill 743

Public Resources Code Section 21099(c)(1), as codified through enactment of SB 743 (Steinberg, 2013), authorized the Office of Planning and Research to establish “alternative metrics to the metrics used for traffic levels of service for transportation impacts outside transit priority areas.” SB 743 reflects a legislative policy to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As finalized in December 2018, amendments to the California Environmental Quality Act (CEQA) Guidelines adopted in furtherance of SB 743 established VMT, in lieu of level of service, as the new metric for transportation analysis.

Assembly Bill 1493 (Pavley Regulations)

AB 1493 (Pavley) directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light-duty trucks to the maximum extent technologically feasible, beginning with the 2009 Model Year. CARB has adopted amendments to its regulations that would enforce AB 1493 but provide vehicle manufacturers with new compliance flexibility. Pavley standards are currently divided into two phases. Standards that regulate vehicles model years 2009 through 2016 are termed “Pavley I”; standards for model years 2017 through 2025 were originally termed “Pavley II.”

With these actions, CARB expects that Pavley I will reduce GHG emissions from California passenger vehicles by a total of 31.7 million metric tons of CO_2e counted toward the total pre-economic downturn statewide reduction target on the capped sector of 146.7 million metric tons or CO_2e (CARB, 2008). CARB adopted a second phase of the Pavley regulations, termed “Pavley II,” which are now called the Low Emission Vehicle III Standards. Low Emission Vehicle III covers model years 2017 through 2025. These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

Advanced Clean Cars Program

In 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for noncommercial passenger vehicles and light-duty trucks for model years 2017–2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles (ZEVs). By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer ozone-forming emissions. In its 2014 First Update, CARB recognized that the light-duty vehicle fleet "will need to become largely electrified by 2050 in order to meet California's emission reduction goals". Accordingly, this program requires about 15 percent of new cars sold in California in 2025 to be a plug-in hybrid, battery electric, or fuel cell vehicles (CARB, 2014a).

Executive Orders B-16-2012 and B-48-18 (Zero-Emission Vehicles)

ZEVs include hydrogen fuel cell electric vehicles (EVs) and plug-in EVs, such as battery EVs and plug-in hybrid EVs. In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet to help California achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. The EO also calls upon CARB, the CEC, and the California Public Utilities Commission to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the state's residents with easy access to ZEV infrastructure. EO B-16-2012 specifically directed California to "encourage the development and success of ZEVs to protect the environment, stimulate economic growth, and improve the quality of life in the State."

In 2018, Governor Brown also issued EO B-48-18, which launched an 8-year initiative to accelerate the sales of ZEVs through a mix of rebate programs and infrastructure improvements. The EO also sets a new target of five million ZEVs in California by 2030 and includes funding for multiple state agencies to increase EV charging infrastructure and provide purchase rebates and incentives.

In February 2013, the Governor's Interagency Working Group on Zero-emission Vehicles issued the 2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025 (Governor's Interagency Working Group, 2013). The 2013 ZEV Action Plan identifies four broad goals for state government to advance ZEVs: (1) complete needed infrastructure and planning, (2) expand consumer awareness and demand, (3) transform fleets, and (4) grow jobs and investment in the private sector.

In October 2016, the Interagency Working Group issued the 2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025 (Governor's Interagency Working Group, 2016). This report provided an update on progress toward achieving the 2013 goals and highlighted the following four top priorities for the upcoming years: (1) raise consumer awareness and education about ZEVs; (2) ensure ZEVs are accessible to a broad range of Californians; (3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and (4) aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: (1) achieve mainstream consumer awareness of ZEV options and benefits, (2) make ZEVs an affordable and attractive option for drivers, (3) ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs, (4) maximize economic and job opportunities from ZEV technologies, (5) bolster ZEV market growth outside of California, and (6) lead by example by integrating ZEVs into state government.

In September 2018, the Interagency Working Group published the 2018 ZEV Action Plan Priorities Update (Governor's Interagency Working Group, 2018). This update is the result of Governor Brown's directive to update the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in zero-emission vehicle infrastructure, particularly in low income and disadvantaged communities. The 2018 Priorities Update serves three fundamental purposes: (1) provide direction to state agencies on the most important actions to be executed in 2018 to enable progress toward the 2025 targets and 2030 Vision; (2) give stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market; and (3) create a platform for stakeholder engagement, feedback, and collaboration.

Executive Order S-01-07 (Low Carbon Fuel Standard)

This EO established a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a low carbon fuel standard (LCFS). CARB adopted the LCFS as a discrete early action measure pursuant to AB 32 in April 2009 and includes it as a reduction measure in its Scoping Plan.

The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean, low carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low carbon fuels such as biofuels, electricity, and hydrogen, by taking into consideration the full life cycle of GHG emissions. A 10 percent reduction in the carbon intensity of transportation fuels is expected to equate to a reduction of 16.5 million metric tons of CO_2e in 2020. However, to account for possible overlap of benefits between LCFS and the Pavley GHG standards, CARB has discounted the contribution of LCFS to 15 million metric tons of CO_2e.

California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the fewest environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators.

1.3 Regional and Local Regulations

SDAPCD Regulation II: Permits

Regulation II (Rules 10-27.1) contains a series of rules covering permitting requirements within the Subdivision and Development Appeal Board. Rule 20.2 covers new source review for non-major stationary sources (SDAPCD, 2021). If the proposed emissions from a new or modified source or a project involving multiple sources exceed certain thresholds, the rule would require best available control technology and an air quality impact analysis. The air quality impact analysis must demonstrate that such emissions increases will not:

> (1) cause a violation of a national ambient air quality standard anywhere that does not already exceed such standard, nor
>
> (2) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor
>
> (3) prevent or interfere with the attainment or maintenance of any national ambient air quality standard.

San Diego Air Pollution Control District Rule 50: Visible Emissions

This rule prohibits the discharge, from any single source of emissions, any air contaminant that aggregates for more than three minutes in any period of 60 consecutive minutes, which is darker in shade than that designated as Number 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to a degree greater than does smoke of a shade designated as Number 1 on the Ringelmann Chart (SDAPCD, 2021).

San Diego Air Pollution Control District Rule 51: Nuisance

This rule prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, and annoyance to people and/or the public, or damage to any business or property (SDAPCD, 2021).

San Diego Air Pollution Control District Rule 55: Fugitive Dust Control

This rule regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site (SDAPCD, 2021).

San Diego Air Pollution Control District Rule 67.0.1: Architectural Coating

This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compounds (VOCs) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD, 2021).

San Diego Air Pollution Control District Rule 67.7: Cutback and Emulsified Asphalts

This rule applies to the application and sale of cutback and emulsified asphalt for paving, construction, or maintenance of parking lots, driveways, streets, and highways. (SDAPCD, 2021).

San Diego Air Pollution Control District Regulation XII (Toxic Air Contaminants)

Regulation XII establishes requirements for several specific source types as well as public notification and emission reduction requirements for stationary sources that emit TACs identified under the California AB 1807 and AB 2588 statutes discussed above. Rule 1210 – Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction established an incremental cancer risk public notification threshold of 10 in 1 million and required facility TAC emission reductions if incremental cancer risks exceeded 100 in 1 million. The rule also established a cancer burden risk threshold of 1.0, a total chronic non-cancer health hazard index threshold of 1.0, and a total acute non-cancer health hazard index threshold of 1.0 (SDAPCD, 2021).

Regional Air Quality Strategy

Similar to the federal designations of attainment and nonattainment areas with respect to the NAAQS, CARB designates areas with respect to the CAAQS. Accordingly, CARB has designated San Diego County as a state nonattainment area for ozone, particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) (CARB, 2021). In compliance with the California CAA, the SDAPCD prepared the 2016 Revision of the Regional Air Quality Strategy for San Diego County to address San Diego County's state nonattainment status for ozone. The Regional Air Quality Strategy identified feasible VOC and NO_x emission control measures for stationary sources, such as industrial operations and manufacturing facilities, to provide expeditious progress toward attaining the state ozone standards. Although the SDAPCD does not have authority to directly regulate mobile sources, the Regional Air Quality Strategy also identified future reductions in mobile source emissions through the SDAPCD's incentive and grant programs. (SDAPCD, 2016b).

City of San Diego Municipal Code

The San Diego Municipal Code addresses air quality and odor impacts at Chapter 14, Article 2, Division 7 paragraph 142.0710, "Air Contaminant Regulations," which states: "Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and PM, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located".

City of San Diego Green Building Regulations

In response to CalGreen, the City of San Diego adopted its Green Building Regulations (Municipal Code Chapter 14, Article 10), which adopt and incorporate by reference specified provisions of the 2016 CalGreen Code.

City of San Diego Climate Action Plan

In December 2015, the City of San Diego adopted its City of San Diego Climate Action Plan (CAP) (City of San Diego, 2016a). The CAP identifies measures to meet GHG reduction targets for 2020 and 2035. The CAP contains a Citywide 2010 baseline of GHG emissions, BAU projections for emissions at 2020 and 2035, state targets, and potential GHG emission reductions due to the implementation of CAP measures. The CAP identifies GHG reduction strategies for energy- and water-efficient buildings; clean and renewable energy; bicycling, walking, transit, and land use; zero waste; and climate resiliency. To achieve its proportional share of the state reduction targets for 2020 (AB 32) and 2050 (EO S-3-05), the city would need to reduce emissions below the 2010 baseline by 15 percent by 2020, 40 percent by 2030, and 50 percent by 2035. The CAP projects that with the implementation of proposed measures, the city would reduce GHGs by 24 percent by 2020, 41 percent by 2030, and 51 percent by 2035.

In 2016, the city amended the CAP and its CEQA Significance Determination Thresholds to incorporate a CAP Consistency Checklist. This Checklist outlines the process to determine the significance of GHG emissions from proposed development projects that are subject to CEQA review.

City of San Diego General Plan

The City of San Diego General Plan 2008 provides policy guidance to balance the needs of a growing city while enhancing quality of life for residents. The Conservation Element of the General Plan identifies multiple city policies that seek to improve local air quality, reduce GHG emissions, and implement climate change adaptation. Examples of such policies include the overall City of Villages strategy; creating walkable communities that utilize transit, bicycling, and transportation demand management; use of sustainable energy resources; and water resource and waste management. Under the City of Villages strategy, the general plan aims to direct new development projects away from natural undeveloped lands into already urbanized areas and/or areas where conditions allow the integration of housing, employment, civic, and transit uses. (City of San Diego, 2008).

Midway-Pacific Highway Community Plan

The Midway-Pacific Highway Community Plan extends the City of San Diego's General Plan policies within the context of the Midway-Pacific Highway Community Plan Area, which encompasses the project site. The Community Plan supports the City of San Diego CAP by providing capacity for development of residential and employment uses in proximity to transit, and by taking a multi-modal approach to improving circulation and access through and within the community. The Plan's Conservation Element includes policies to reduce the community's impact on air quality and climate change, such as planning for higher-density development in Transit Priority Areas (areas within one-half mile of a major transit stop); supporting regional improvements that promote alternative modes of transportation, such as mobility hubs; providing on-site photovoltaic energy generation and energy storage systems; encouraging energy- and water-efficient building systems; increasing the community's overall tree canopy; and incorporating air pollution-attenuating features into new residential buildings located within 500 feet of a freeway. Section 3.4, *Land Use*, provides a further discussion of the Community Plan. (City of San Diego, 2018a).

San Diego Forward: The Regional Plan

As the Metropolitan Planning Organization for San Diego County, SANDAG is responsible for preparing the RTP. The current RTP for San Diego County is *San Diego Forward: The Regional Plan* (2015 Regional Plan) (SANDAG, 2015). The 2015 Regional Plan includes an advisory plan for transit, rail, and bus services; express or managed lanes; highways; local streets; bicycling; and walking. In accordance with SB 375, the 2015 Regional Plan also includes a SCS. The SCS contains land use, housing, and transportation strategies designed to achieve GHG emission reduction targets for passenger vehicles set by CARB. The current targets are to reduce per-capita passenger vehicle emissions by 15 percent by 2020 and by 21 percent by 2035, compared to 2005 baseline levels. In general, the intent of the SCS is to reduce passenger VMT by locating residents closer to where they work and play and designing communities with easy access to transit services and non-vehicular modes of transportation, which would produce a corresponding reduction in GHG emissions.

SANDAG is currently working on San Diego Forward: The 2021 Regional Plan (2021 Regional Plan), a bigger picture vision which looks beyond the 2050 horizon year to prepare for the next planning cycle. SANDAG anticipates adoption of the 2021 Regional Plan in late 2021.

Additional sources for the above federal, state, regional, and local regulation descriptions include: City of San Diego, 2018b; City of San Diego, 2019; San Diego County Regional Airport Authority, 2019; and San Diego State University, 2020.

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2 Emission Quantification Methodology

The air quality analysis used California Emissions Estimator Model (CalEEMod) version 2016.3.2 to quantify criteria pollutant and GHG emissions for Old Town Campus (OTC) existing conditions and the project alternatives. CalEEMod is a statewide program designed to calculate criteria pollutant and GHG emissions from land use development projects in California. It was designed to be used for a variety of situations where an air quality analysis is necessary or desirable such as preparing CEQA or National Environmental Policy Act (NEPA) documents, conducting pre-project planning, and verifying compliance with local air quality rules and regulations (California Air Pollution Control Officers Association [CAPCOA], 2016).

CalEEMod uses widely accepted emission calculation methods combined with default data that can be used if site-specific information is not available. The CalEEMod User's Guide and associated appendices describe the specific methodologies used by CalEEMod in detail (CAPCOA, 2017). This appendix provides the methodology used to prepare the CalEEMod inputs. Attachment 2 includes the CalEEMod input and output files that document the specifics of the analysis.

CalEEMod reports GHGs individually and as CO_2e. To obtain the CO_2e, each GHG is multiplied by its GWP and the products are summed over all GHGs. The GWP designates on a pound-for-pound basis the potency of the GHG compared to CO_2. The program uses GWPs from the 2007 IPCC Fourth Assessment Report (IPCC, 2007), which are consistent with CARB's 2014 Scoping Plan Update (CARB, 2014a).

This appendix also describes the methodology for speciating the criteria pollutant emissions into their HAP components.

2.1 Construction Methodology

CalEEMod calculated direct construction emissions for the following sources:

- On-site construction equipment (engine exhaust)
- Vehicle trips to and from the site associated with workers, vendors, and hauling (engine exhaust; particulates from tire wear, brake wear, and road dust)
- On-site fugitive dust associated with grading, demolition, and truck loading
- Architectural coating activities (evaporative VOC emissions from painting buildings and parking lots)
- On-site paving (off-gassing VOC emissions from laying asphalt)

To assess NEPA impacts (see Section 3.1) and CEQA impacts (see Appendix A), this analysis included all construction emissions associated with the sources identified in the preceding bullets. For general conformity, this analysis included only the direct and indirect construction-related emissions from sources that would be practicably controllable and over which the Navy would have continuing program responsibility. Specifically, the general conformity analysis (see Section 3.1.5.2) included construction emissions associated with (1) all on-site sources, and (2) outbound one-way trips for trucks hauling debris or soil off-site. The general conformity analysis excluded off-site emissions associated with construction worker trips, vendor trips, and inbound empty haul truck trips because they would not be practicably controllable by the Navy.

The following methodology describes the key assumptions used in estimating construction emissions for the project alternatives. Project-specific data were used where available. Where project-specific data were lacking, this analysis used a combination of CalEEMod default data for San Diego County and conservative assumptions. Default data were used for portions of the CalEEMod input not specifically discussed below.

2.1.1 Construction Elements

Table D-2 shows the building floor space and paved surface area proposed for construction by each project alternative, based on CalEEMod land use categories. CalEEMod used these values to estimate the default number of on-road vehicle trips during the building construction phase and the quantity of architectural coatings applied to the constructed buildings and parking lots.

Table D-2 Building Floor Space and Paved Surface Area Proposed for Construction, by CalEEMod Land Use Category (square feet)

Development Type/CalEEMod Land Use Category	*Alternative 1(1)*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development	-	-	-	-	-
Government Office Building(2)	1,045,520	874,482	874,482	874,482	874,482
Research & Development	174,865	165,614	165,614	165,614	165,614
Unrefrigerated Warehouse	345,941	24,172	24,172	24,172	24,172
Other Asphalt Surfaces(3)	439,506	57,495	57,495	57,495	57,495
Parking Lot (Asphalt)	1,001,502	0	0	0	0
Unenclosed Parking Structure with Elevator	0	630,000	630,000	630,000	630,000
Private Development	**-**	**-**	**-**	**-**	**-**
Apartments Mid-Rise(4)	0	2,880,000	2,304,000	2,880,000	2,880,000
Apartments High-Rise(5)	0	3,456,000	1,920,000	6,720,000	4,800,000
General Office Building	0	1,000,000	650,000	1,350,000	850,000
Hotel	0	260,000	160,000	290,000	290,000
Retail - Strip Mall	0	180,000	130,000	250,000	200,000
Government (Civic Center) (Transit Center)	0	0	0	140,000	140,000
Parking Lot (Asphalt) (Transit Center)	0	0	0	175,000	175,000
Unenclosed Parking Structure with Elevator	0	4,123,700	2,741,900	6,090,000	4,782,750
Other Asphalt Surfaces(3)	0	989,455	1,243,071	786,516	950,182

Legend: - = no data in cell.

Notes: (1) The values shown for Alternative 1 represent the construction that would occur at OTC Site 1. The land uses at OTC Site 2 would remain unmodified under Alternative 1 and therefore are not included in the table.
(2) Includes conference/auditorium space.
(3) Other Asphalt Surfaces include areas such as streets and open storage.
(4) Defined in the CalEEMod Guidance as 3-10 levels.
(5) Defined in the CalEEMod Guidance as >10 levels.

Table D-3 shows the modeled acreages of disturbed land during construction by CalEEMod land use category. CalEEMod used these values to estimate the default construction phase durations, construction equipment counts, and amount of required grading.

Table D-3 Disturbed Land Areas by CalEEMod Land Use Category (acres)

Development Type/CalEEMod Land Use Category[(1)]	*Alternative 1*[(2)]	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development	-	-	-	-	-
Government Office Building[(3)]	4.46	2.18	2.18	2.18	2.18
Research & Development[(3)]	4.46	2.18	2.18	2.18	2.18
Unrefrigerated Warehouse[(3)]	4.46	0.55	0.55	0.55	0.55
Other Asphalt Surfaces	10.09	1.32	1.32	1.32	1.32
Parking Lot (Asphalt)	22.99	0	0	0	0
Unenclosed Parking Structure with Elevator	0	1.81	1.81	1.81	1.81
Subtotal	**46.4**	**8.0**	**8.0**	**8.0**	**8.0**
Private Development	-	-	-	-	-
Apartments Mid-Rise	0	12.5	11.46	9.18	10.19
Apartments High-Rise	0	15	9.55	21.42	16.99
General Office Building	0	4.34	3.23	4.3	3.01
Hotel	0	1.13	0.8	0.92	1.03
Retail - Strip Mall[(4)]	0	0	0	0	0
Government (Civic Center) (Transit Center)	0	0	0	2.06	3.13
Parking Lot (Asphalt) (Transit Center)	0	0	0	2.06	3.13
Unenclosed Parking Structure with Elevator[(5)]	0	6.31	8.43	3.99	2.68
Other Asphalt Surfaces (streets)	0	22.71	28.54	18.06	21.81
Subtotal	**0**	**62.0**	**62.0**	**62.0**	**62.0**
Total	**46.4**	**70.0**	**70.0**	**70.0**	**70.0**

Legend = - no data in cell.

Notes: [(1)] Landscaped green space is included in the acreages for the commercial and residential buildings.

[(2)] The total disturbed acreage for Alternative 1 (46.4 acres) is smaller than the other alternatives (70.0 acres) because construction for Alternative 1 would occur only on OTC Site 1, whereas construction for Alternatives 2 through 5 would occur on both OTC Site 1 and OTC Site 2.

[(3)] The disturbed acres for the government office building, research & development, and unrefrigerated warehouse land uses in Alternative 1 (totaling 13.4 acres) would be for refurbishment of existing buildings, so there would be no grading on those acres.

[(4)] To avoid double counting land areas, the value for retail was set to zero because retail would share space with the commercial and residential buildings.

[(5)] To avoid double counting land areas, only acreages for standalone parking structures were included in this category. The acreages assigned to commercial and residential buildings account for parking structures at the base of those buildings.

Source: M. Carpenter, KTU+A, personal communication, April 13, 2020.

Table D-4 presents the number of new parking stalls that would be constructed for the project alternatives. CalEEMod used this data to estimate the quantity of architectural coatings applied for the parking lot striping.

Table D-4 New Parking Stalls Constructed, by CalEEMod Land Use Category (# stalls)

Development Type/CalEEMod Land Use Category	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development	-	-	-	-	-
Multi-story concrete structure	0	2,000	2,000	2,000	2,000
Asphalt Lot	3,180[(1)]	0	0	0	0
Private Development	-	-	-	-	-
Multi-story concrete structure	0	11,782	7,834	17,400	13,665
Asphalt Lot (Transit Center)	0	0	0	500	500

Legend = - no data in cell.

Note: [(1)] This value represents the number of new parking spaces constructed on OTC Site 1 for Alternative 1. There would be 1,361 existing parking spaces on OTC Site 2 that would remain unmodified, bringing the total number of existing and new parking spaces to 4,541.

Source: M. Carpenter, KTU+A, personal communication, April 13, 2020.

2.1.2 Construction Schedule

This analysis assumed the following general construction timeline:

- Navy development would be constructed from 2021 through 2025 for all action alternatives (Alternatives 1 through 5).
- Private development would be constructed from 2026 through 2049 for Alternatives 2 through 5. There would be no private development for Alternative 1.
- The transit center would be constructed from 2026 through 2034 for Alternatives 4 and 5. There would be no transit center constructed for Alternatives 1, 2, or 3.
- There would be no construction for the No Action Alternative and existing conditions.

For the action alternatives, CalEEMod quantified emissions for the following construction phases:

- Demolition – involves removing buildings or structures.
- Site Preparation – involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
- Grading – involves the cut and fill of land to ensure that the proper base and slope is created for the foundation. For Alternatives 2 through 5, additional equipment was manually added to this phase to model underground utility installation together with grading.
- Foundation Drilling – involves the installation of caissons or piles to support building foundations.
- Building Construction – involves the construction of the foundation, structures, and buildings.
- Architectural Coating – involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.

- Paving – involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

Each of the phases listed above is a default phase in CalEEMod except foundation drilling, which was manually added to CalEEMod. At the time of this analysis, the preliminary conceptual drawings of the action alternatives provided counts for proposed new buildings having nine floors or greater. Therefore, this analysis assumed that foundation drilling would occur for each constructed building or parking structure having nine floors or greater. The drilling phase duration was assumed to be 10 work days per structure. Because Alternative 1 would have no structures nine floors or greater, only Alternatives 2 through 5 would have foundation drilling. This analysis assumed the following structure counts for foundation drilling, based on the preliminary conceptual drawings:

- Alternatives 2-5, Navy Development: 4 structures with 9+ floors
- Alternative 2, Private Development: 57 structures with 9+ floors
- Alternative 3, Private Development: 48 structures with 9+ floors
- Alternative 4, Private Development: 84 structures with 9+ floors
- Alternative 5, Private Development: 88 structures with 9+ floors

Tables D-5 through D-10 present the construction schedules modeled in CalEEMod. The tables are organized by alternative and by Navy Development versus Private Development. Except where noted, the construction schedules use the CalEEMod defaults for phase order and duration. CalEEMod determined phase duration from the total disturbed land areas for Navy Development and Private Development in Table D-3. The disturbed land areas are 46.4 acres for Alternative 1 Navy Development, 8.0 acres for Alternatives 2 through 5 Navy Development, and 62.0 acres for Alternatives 2 through 5 Private Development.

Because the exact construction schedules have not yet been defined for the action alternatives, the modeled schedules are conceptual and are not intended to commit an action alternative to any particular order or timing of phases. Their purpose is to provide reasonable construction scenarios suitable for evaluating potential air quality and GHG impacts. In practice, the construction phases may have multiple starts and stops within each construction period as construction activities shift from parcel to parcel. For simplicity, each phase was modeled in CalEEMod as a continuous event, while preserving the predicted total and maximum daily activity levels.

Any delay to the start of construction, which this analysis assumed would be January 1, 2021, would not result in emissions greater than those estimated in this analysis. Emissions from on-site sources would be approximately unchanged. Emissions associated with worker, vendor, and truck haul trips could be lower with a delayed construction start year due to future fleet turnover where older vehicles are gradually retired and replaced with newer vehicles meeting cleaner emission standards.

As shown in Tables D-7 through D-10, the modeled construction phases for Private Development were manually re-started to coincide with each intermediate operational analysis year (2026, 2030, and 2035). This modeling approach made it possible to estimate overlapping construction and operational emissions in each operational analysis year while accounting for the declining temporal trend in vehicle emissions due to future fleet turnover. The total numbers of work days for the grading, foundation drilling, paving, and architectural coating phases in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049. This apportionment is consistent with the assumption that Private Development would be 25 percent operational by 2030, 45 percent operational by 2035, and 100 percent operational by 2050.

Table D-5 Construction Schedule Modeled in CalEEMod for Alternative 1

Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days*
Demolition	1/1/2021	3/11/2021	5	50
Site Preparation[1]	3/12/2021	4/8/2021	5	20
Grading[1]	4/9/2021	6/10/2021	5	45
Building Construction	6/11/2021	7/30/2025	5	1,079
Paving	7/31/2025	10/15/2025	5	55
Architectural Coating	10/16/2025	12/31/2025	5	55

Notes: [1] Total work days for site preparation and grading reflect an equivalent 33-acre site to account for no such activity on 13.4 acres of the 46.4-acre site where existing building refurbishment would occur.

Table D-6 Construction Schedule Modeled in CalEEMod for Alternatives 2 through 5, Navy Development

Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days*
Demolition[1]	1/1/2021	1/28/2021	5	20
Site Preparation	1/29/2021	2/11/2021	5	10
Grading and Utilities	2/12/2021	3/11/2021	5	20
Foundation Drilling	2/12/2021	4/8/2021	5	40
Building Construction	3/12/2021	11/5/2025	5	1,214
Paving	11/6/2025	12/3/2025	5	20
Architectural Coating	12/4/2025	12/31/2025	5	20

Notes: [1] Depending on the selected location within the OTC, construction of the Navy Development for Alternatives 2 through 5 may not require demolition of existing structures. However, to be conservative, the analysis assumed demolition would occur.

Table D-7 Construction Schedule Modeled in CalEEMod for Alternative 2, Private Development

Years/Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days*(1)
2026-2029	-	-	-	-
Demolition(2)	1/1/2026	4/8/2026	5	70
Site Preparation(2)	4/9/2026	6/3/2026	5	40
Grading and Utilities	6/4/2026	7/13/2026	5	28
Foundation Drilling	6/4/2026	12/21/2026	5	143
Building Construction	7/14/2026	11/7/2029	5	867
Paving	11/8/2029	12/4/2029	5	19
Architectural Coating	12/5/2029	12/31/2029	5	19
2030-2034	-	-	-	-
Grading and Utilities	1/1/2030	1/30/2030	5	22
Foundation Drilling	1/1/2030	6/7/2030	5	114
Building Construction	1/31/2030	11/17/2034	5	1,252
Paving	11/18/2034	12/8/2034	5	15
Architectural Coating	12/9/2034	12/31/2034	5	15
2035-2049	-	-	-	-
Grading and Utilities	1/1/2035	3/26/2035	5	61
Foundation Drilling	1/1/2035	3/13/2036	5	314
Building Construction	3/27/2035	9/8/2049	5	3,772
Paving	9/9/2049	11/4/2049	5	41
Architectural Coating	11/5/2049	12/31/2049	5	41

Legend: - = no data in cell.

Notes: (1) The total number of work days for the grading, foundation drilling, paving, and architectural coating phases in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

(2) All demolition and site preparation were assumed to occur in the 2026-2029 period.

Table D-8 Construction Schedule Modeled in CalEEMod for Alternative 3, Private Development

Years/Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days[1]*
2026-2029	-	-	-	-
Demolition[2]	1/1/2026	4/8/2026	5	70
Site Preparation[2]	4/9/2026	6/3/2026	5	40
Grading and Utilities	6/4/2026	7/13/2026	5	28
Foundation Drilling	6/4/2026	11/18/2026	5	120
Building Construction	7/14/2026	11/7/2029	5	867
Paving	11/8/2029	12/4/2029	5	19
Architectural Coating	12/5/2029	12/31/2029	5	19
2030-2034	-	-	-	-
Grading and Utilities	1/1/2030	1/30/2030	5	22
Foundation Drilling	1/1/2030	5/14/2030	5	96
Building Construction	1/31/2030	11/17/2034	5	1,252
Paving	11/18/2034	12/8/2034	5	15
Architectural Coating	12/9/2034	12/31/2034	5	15
2035-2049	-	-	-	-
Grading and Utilities	1/1/2035	3/26/2035	5	61
Foundation Drilling	1/1/2035	1/3/2036	5	264
Building Construction	3/27/2035	9/8/2049	5	3,772
Paving	9/9/2049	11/4/2049	5	41
Architectural Coating	11/5/2049	12/31/2049	5	41

Legend: - = no data in cell

Notes: (1) The total number of work days for the grading, foundation drilling, paving, and architectural coating phases in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

(2) All demolition and site preparation were assumed to occur in the 2026-2029 period.

Table D-9 Construction Schedule Modeled in CalEEMod for Alternative 4, Private Development

Years/Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days*[(1)]
2026-2029	-	-	-	-
Demolition[(2)]	1/1/2026	4/8/2026	5	70
Site Preparation[(2)]	4/9/2026	6/3/2026	5	40
Grading and Utilities	6/4/2026	7/13/2026	5	28
Foundation Drilling	6/4/2026	3/24/2027	5	210
Building Construction	7/14/2026	11/7/2029	5	867
Paving	11/8/2029	12/4/2029	5	19
Architectural Coating	12/5/2029	12/31/2029	5	19
2030-2034	-	-	-	-
Grading and Utilities	1/1/2030	1/30/2030	5	22
Foundation Drilling	1/1/2030	8/22/2030	5	168
Building Construction	1/31/2030	11/17/2034	5	1,252
Paving	11/18/2034	12/8/2034	5	15
Architectural Coating	12/9/2034	12/31/2034	5	15
2035-2049	-	-	-	-
Grading and Utilities	1/1/2035	3/26/2035	5	61
Foundation Drilling	1/1/2035	10/7/2036	5	462
Building Construction	3/27/2035	9/8/2049	5	3,772
Paving	9/9/2049	11/4/2049	5	41
Architectural Coating	11/5/2049	12/31/2049	5	41

Legend: - = no data in cell.

Notes: (1) The total number of work days for the grading, foundation drilling, paving, and architectural coating phases in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

(2) All demolition and site preparation were assumed to occur in the 2026-2029 period.

Table D-10 Construction Schedule Modeled in CalEEMod for Alternative 5, Private Development

Years/Phase Name	*Start Date*	*End Date*	*Work Days Per Week*	*Total Work Days*[1]
2026-2029	-	-	-	-
Demolition[2]	1/1/2026	4/8/2026	5	70
Site Preparation[2]	4/9/2026	6/3/2026	5	40
Grading and Utilities	6/4/2026	7/13/2026	5	28
Foundation Drilling	6/4/2026	4/7/2027	5	220
Building Construction	7/14/2026	11/7/2029	5	867
Paving	11/8/2029	12/4/2029	5	19
Architectural Coating	12/5/2029	12/31/2029	5	19
2030-2034	-	-	-	-
Grading and Utilities	1/1/2030	1/30/2030	5	22
Foundation Drilling	1/1/2030	9/3/2030	5	176
Building Construction	1/31/2030	11/17/2034	5	1,252
Paving	11/18/2034	12/8/2034	5	15
Architectural Coating	12/9/2034	12/31/2034	5	15
2035-2049	-	-	-	-
Grading and Utilities	1/1/2035	3/26/2035	5	61
Foundation Drilling	1/1/2035	11/6/2036	5	484
Building Construction	3/27/2035	9/8/2049	5	3,772
Paving	9/9/2049	11/4/2049	5	41
Architectural Coating	11/5/2049	12/31/2049	5	41

Legend: - = no data in cell.

Notes: (1) The total number of work days for the grading, foundation drilling, paving, and architectural coating phases in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

(2) All demolition and site preparation were assumed to occur in the 2026-2029 period.

During each Navy Development and Private Development construction sequence (2021-2025, 2026-2029, 2030-2034, and 2035-2049), the building construction phase duration was manually adjusted to exactly fill up the construction time period. The quantity of equipment used during the building construction phase was also adjusted to reflect the phase duration and the amount of floor space to be constructed.

2.1.3 Construction Equipment

Table D-11 lists the construction equipment counts modeled in CalEEMod for each alternative. The analysis used CalEEMod defaults for equipment counts, daily operating hours, horsepower ratings, and load factors except where noted. The most notable exception is the equipment counts used for the building construction and architectural coating phases. The CalEEMod default equipment counts for those two phases are relatively low, indicative of a single building construction event. Specifically, the default equipment count for building construction is one crane, three forklifts, three tractors/loaders/ backhoes, one welder, and one generator set. The default equipment count for architectural coating is one air compressor. By contrast, the rate of construction necessary for the action alternatives would require the simultaneous use of multiple equipment sets.

Table D-11 Construction Equipment Counts Modeled in CalEEMod (# units)

Phase/Construction Equipment[1]	*Alternative 1 Navy*	*Alternatives 2-5 Navy*	*Alternative 2 Private*	*Alternative 3 Private*	*Alternative 4 Private*	*Alternative 5 Private*
Demolition	-	-	-	-	-	-
Concrete/Industrial Saws	1	1	1	1	1	1
Excavators	3	3	3	3	3	3
Rubber Tired Dozers	2	2	2	2	2	2
Site Preparation	-	-	-	-	-	-
Rubber Tired Dozers	3	3	3	3	3	3
Tractors/Loaders/Backhoes	4	4	4	4	4	4
Grading and Utilities[2]	[3]	-	-	-	-	-
Excavators	2	1	2	2	2	2
Forklifts	0	1	1	1	1	1
Graders	1	1	1	1	1	1
Off-Highway Trucks	0	2	2	2	2	2
Other Material Handling Equipment	0	1	1	1	1	1
Rubber Tired Dozers	1	1	1	1	1	1
Scrapers	2	0	2	2	2	2
Tractors/Loaders/Backhoes	2	4	3	3	3	3
Trenchers	0	1	1	1	1	1
Foundation Drilling[4]	[5]	-	-	-	-	-
Bore/Drill Rigs	0	1	1	1	1	1
Cranes	0	2	2	2	2	2
Building Construction[6]	-	-	-	-	-	-
Cranes	2	4	6	4	9	7
Forklifts	6	12	18	12	27	21
Generator Sets	2	4	6	4	9	7
Tractors/Loaders/Backhoes	6	12	18	12	27	21
Welders	2	4	6	4	9	7
Paving	-	-	-	-	-	-
Pavers	2	2	2	2	2	2
Paving Equipment	2	2	2	2	2	2
Rollers	2	2	2	2	2	2
Architectural Coating[6]	-	-	-	-	-	-
Air Compressors	4	4	6	4	9	7

Notes: [1] Except where noted, equipment counts are CalEEMod defaults based on total disturbed land area for the Navy or Private Development.

[2] The following equipment was manually added to the grading phase for Alternatives 2-5 to account for underground utility installation: one forklift, two off-highway trucks, one other material handling equipment, one tractor/loader/backhoe, and one trencher. Typical utility installation equipment counts were obtained from the *Valiano Project Draft Final Environmental Impact Report* (County of San Diego, 2018). The utility installation equipment was assumed to operate 8 hours per day. CalEEMod default horsepower ratings were used.

[3] As stated in Section 3.11, construction of Alternative 1 would not require substantial ground disturbance related to utility installation. Therefore, the equipment list for Alternative 1 is exclusively for grading.

[4] Ten work days of foundation drilling were assumed for each structure with nine floors or greater. Typical drilling equipment counts were obtained from the *Terminal Island (Pier 400) Railyard Enhancement Project Final IS/MND* (Los Angeles Harbor Department, 2018). All equipment was assumed to operate 8 hours per day. CalEEMod default horsepower ratings were used for the cranes. An average rating of 500 horsepower was assigned to the drill rig based on online research (Pile Buck, 2018).

[5] Alternative 1 would not construct any buildings with nine floors or greater; therefore, no foundation drilling was modeled.

[6] For the building construction and architectural coating phases, the default equipment counts were multiplied by the estimated number of simultaneous equipment sets shown in Tables D-12 and D-13. The adjusted equipment counts are displayed in the table.

Table D-12 presents the number of simultaneous equipment sets assumed for the building construction and architectural coating phases for Private Development construction (2026-2049). The computations assume that one equipment set would be needed to construct approximately 80,000 square feet of building floor space in one year (80,000 square feet is the smallest average building size of any alternative). Accordingly, the number of simultaneous equipment sets needed for each alternative was determined by that alternative's total floor space to be constructed over the 24-year period. The estimated number of simultaneous equipment sets was multiplied by the CalEEMod default equipment counts for the building construction and architectural coating phases to produce the adjusted equipment counts shown in Table D-11.

Table D-12 Number of Simultaneous Equipment Sets Estimated for Building Construction and Architectural Coating for Private Development

Alternative	*Total # of Private Development Buildings to be Constructed[1]*	*Total Years of Private Development Construction*	*Average # of Buildings Completed per Year*	*Average Building Floor Space (square feet)[2]*	*Average Construction Time per Building (years)[3]*	*# of Simultaneous Equipment Sets[4]*
Alternative 2	84	24	3.5	141,663	1.8	6
Alternative 3	99	24	4.1	79,858	1.0	4
Alternative 4	102	24	4.3	173,725	2.2	9
Alternative 5	100	24	4.2	139,428	1.7	7

Notes: [1] Sum of buildings and parking structures from the preliminary conceptual drawings of the alternatives available at the time of this analysis, minus seven Navy development buildings.
[2] Equals (Land Use Square Feet + Parking Structure Square Feet)/# of Buildings Constructed. Land Use Square Feet is from Table D-2, Private Development, excluding asphalt parking lots and other asphalt surfaces.
[3] Estimated construction time per building is assumed to be one year for Alternative 3 (smallest average building floor space). Other alternatives were scaled up by average building floor space.
[4] Rounded to the nearest whole number, as these estimates are approximate.

Table D-13 presents the number of simultaneous equipment sets assumed for the building construction and architectural coating phases for Navy Development construction (2021-2025). The estimates are based on the same approach used for private development. The estimated number of simultaneous equipment sets was multiplied by the CalEEMod default equipment counts for the building construction and architectural coating phases to produce the adjusted equipment counts shown in Table D-11.

Table D-13 Number of Simultaneous Equipment Sets Estimated for Building Construction and Architectural Coating for Navy Development

Alternative	*Total Building Floor Space Constructed (square feet)*[(1)]	*Amount of Construction Needed (equipment set-years)*[(2)]	*Available Years of Construction (years)*	*# of Simultaneous Equipment Sets for Building Construction*[(3)]	*# of Simultaneous Equipment Sets for Architectural Coating*[(3)]
Alternative 1 Navy Development	1,566,326	20	5	2[(4)]	4
Alternatives 2-5 Navy Development	1,694,268	21	5	4	4

Notes: [(1)] From Table D-2, Navy Development, excluding asphalt parking lots and other asphalt surfaces.
[(2)] Scaled from the building construction equipment set assumptions for Private Development (Table D-12): one equipment set-year for every 80,000 square feet constructed. An equipment set-year is the equivalent of one equipment set operating for one year.
[(3)] Rounded to the nearest whole number, as these estimates are approximate.
[(4)] For the Alternative 1 building construction phase, this analysis assumed the effective square feet is one-half the actual square feet because construction would consist primarily of existing building refurbishment rather than new building construction.

As a construction management practice, all off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards. Although CalEEMod modeled this reduction as a mitigation measure, it was treated as a project element in this analysis. This measure is identified as proposed Management Practice AQ MGMT-3 in Draft Environmental Impact Statement (EIS) Section 3.1.

2.1.4 Soil Export and Haul Trips

Table D-14 presents the estimated quantity of soil to be exported off-site during the grading phase of construction. The Draft EIS land use study provided the soil export quantities. The table also presents the number of truck trips needed to haul the soil off-site. CalEEMod estimated off-site soil haul truck trips by assuming each truck would carry 16 cubic yards. CalEEMod default trip lengths were used to calculate VMT. The displayed soil and trip quantities for Private Development were apportioned in CalEEMod 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

Table D-14 Net Soil Export and Associated Haul Trips Modeled in CalEEMod

Alternative	*Net Soil Export (cubic yards)*	*Total Haul Trips[(1)]*
Navy Development	-	-
Alternative 1	113,000	14,125
Alternatives 2 through 5[(2)]	60,000	7,500
Private Development[(2)(3)]	-	-
Alternative 2	490,000	61,250
Alternative 3	490,000	61,250
Alternative 4	460,000	57,500
Alternative 5	400,000	50,000

Legend: - = no data in cell.

Notes: (1) CalEEMod estimated the haul trips by assuming a default truck capacity of 16 cubic yards.
(2) For Alternatives 2 through 5, the soil export quantities assigned to the Navy Development and Private Development were scaled from the total export quantity in proportion to their relative land acreages (approximately 11 percent for Navy Development and 89 percent for Private Development).
(3) The soil export quantities for Private Development modeled in CalEEMod were apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049.

Source: M. Carpenter, KTU+A, personal communication, April 13, 2020.

2.1.5 Demolition and Haul Trips

Table D-15 provides the estimated quantity of demolition debris and the associated truck haul trips for each build alternative. The debris quantities were obtained from the hazardous materials study (Draft EIS Section 3.7). CalEEMod used the quantities to estimate the generation of fugitive dust emissions and the number of truck haul trips needed to remove the debris from OTC. CalEEMod default trip lengths were used to calculate VMT.

Table D-15 Demolition Debris and Associated Haul Trips Modeled in CalEEMod

Alternative	*Demolition Debris Hauled Off-Site (tons)*	*Total Haul Trips[(1)]*
Alternative 1 Navy Development	24,490	2,422
Alternatives 2-5 Navy Development[(2)]	18,854	1,864
Alternatives 2-5 Private Development[(3)]	152,546	15,084

Notes: (1) Total haul trips were estimated by CalEEMod using default truck capacity assumptions.
(2) Depending on the selected location within OTC, construction of the Navy Development for Alternatives 2 through 5 might not require demolition of existing structures. However, to be conservative, the analysis assumed demolition would occur during Navy development construction. The total estimated demolition debris (171,400 tons) was apportioned to the Navy Development and Private Development in proportion to their respective land acreages (11 percent to Navy Development and 89 percent to Private Development).
(3) For Private Development, all demolition was assumed to occur in the 2026-2029 construction period.

Source: Hazardous materials study (Draft EIS Section 3.7).

2.1.6 Construction Worker Trips

Table D-16 shows the number of daily worker trips modeled in CalEEMod for the building construction phase. These quantities were derived from estimates of the number of on-site construction workers provided by the Draft EIS socioeconomics study. Architectural coating worker trips were also modified in CalEEMod to equal 20 percent of the building construction phase trips, in accordance with the

CalEEMod User Guide. CalEEMod used the default numbers of worker trips for the demolition, site preparation, grading, and paving phases based on the number of construction equipment. For the foundation drilling phase, an estimate of 20 worker trips per day was used (Los Angeles Harbor Department, 2018). CalEEMod used default worker trip lengths to calculate VMT.

Table D-16 Daily Construction Worker Trips During the Building Construction Phase (trips/day)

Development Type/Alternative(1)	*Years 2021-2025*	*Years 2026-2029*	*Years 2030-2034*	*Years 2035-2049*
Navy Development	-	-	-	-
Alternative 1	662	0	0	0
Alternatives 2-5	2,234	0	0	0
Private Development	-	-	-	-
Alternative 2	0	946	946	946
Alternative 3	0	628	628	628
Alternative 4	0	3,326	3,326	1,392
Alternative 5	0	3,026	3,026	1,090

Legend: - = no data in cell.

Notes: (1) In accordance with the CalEEMod User Guide, the number of daily trips was assumed to be 2 times the number of daily on-site construction workers.

Source: Draft EIS socioeconomics study (D. Kiernan, personal communication, March 13, 2020).

2.1.7 Construction Vendor Trips

Table D-17 presents the number of daily vendor trips (concrete trucks, water trucks, building material delivery trucks, etc.) modeled in CalEEMod during the building construction phase. CalEEMod used default assumptions to estimate the total number of vendor trips. The daily number of vendor trips was manually adjusted to preserve the total default number of vendor trips while accounting for the modified building construction phase lengths listed in Tables D-5 through D-10. For the foundation drilling phase, an estimate of 16 vendor trips per day was used (Los Angeles Harbor Department, 2018). CalEEMod used default vender trip lengths to calculate VMT.

Table D-17 Daily Vendor Trips During the Building Construction Phase

Alternative	*Default Daily Vendor Trips(1)*	*Default Building Construction Length (days)(1)*	*Revised Building Construction Length (days)(2)*	*Revised Daily Vendor Trips(3)*
Navy Development	-	-	-	-
Alternative 1	493	740	1,079	338
Alternatives 2-5	287	230	1,214	54
Private Development	-	-	-	-
Alternative 2	1,780	1,110	5,891	335
Alternative 3	1,278	1,110	5,891	241
Alternative 4	2,557	1,110	5,891	482
Alternative 5	2,066	1,110	5,891	389

Legend: - = no data in cell.

Notes: (1) Default values were estimated by CalEEMod.
(2) From Tables D-5 through D-10.
(3) Revised vendor trips = default trips × default work days / revised work days.

2.1.8 Fugitive Dust

CalEEMod default assumptions were used in the calculation of fugitive dust emissions from grading, demolition, truck loading, and paved road dust. This analysis assumed that on-site disturbed land areas would be watered two times per day, per SDAPCD Rule 55. Accordingly, CalEEMod applied a 55 percent reduction to PM_{10} and $PM_{2.5}$ fugitive dust emissions from on-site earth disturbance. Although CalEEMod labels this reduction as a mitigation measure, it was treated as a project element in this analysis. This measure is part of proposed Management Practice AQ MGMT-1 in Draft EIS Section 3.1.

2.1.9 Architectural Coating

CalEEMod estimated the default areas of interior and exterior building surfaces and asphalt surfaces to be painted during construction, based on the land use sizes shown in Table D-2. For Private Development, the default quantities in CalEEMod were manually apportioned 25 percent to years 2026-2029, 20 percent to 2030-2034, and 55 percent to 2035-2049. The calculations assumed an architectural coating VOC limit of 50 grams per liter for interior (flat) coatings and 100 grams per liter for exterior (non-flat) and pavement coatings to reflect the requirements of SDAPCD Rule 67.0.1.

As an artifact of the construction schedules in Tables D-7 through D-10, CalEEMod assigned all architectural coating emissions during Private Development construction to years 2029, 2034, and 2049. In practice, the application of coatings would occur relatively evenly over the construction period as the structures are completed. Therefore, the annual architectural coating emissions of reactive organic gases (ROG) predicted by CalEEMod for Private Development were manually distributed evenly across the years 2028 through 2049 (2028 being the year the first private development structure would be completed, as predicted by CalEEMod). This analysis assumed that ROG is equivalent to VOC.

Furthermore, CalEEMod assumed as a default that all architectural coating activities over the entire 5-year construction period for the Navy development would occur on only 20 work days. For private development, CalEEMod assumed all architectural coating activities over the entire 24-year construction period would occur on only 75 work days. These relatively few work days resulted in unrealistically high estimates of maximum daily VOC emissions for Alternatives 4 and 5 in the CEQA analysis. Nevertheless, because this analysis did not have any project-specific work day assumptions to use in lieu of the CalEEMod defaults, the defaults were retained in the analysis for the unmitigated maximum daily emission estimates. These assumptions did not affect the NEPA analysis because the NEPA analysis only required estimates of annual emissions.

The default number of architectural coating work days assumed by CalEEMod is based on the number of acres developed rather than the building floor space constructed. For high-density development projects like Alternatives 4 and 5, where there is a high ratio of building floor space to acres, the CalEEMod default number of work days is unrealistically low. Therefore, this analysis developed a mitigation measure for the CEQA analysis (categorized as a management practice for NEPA analysis) to limit the daily amount of coating application such that the maximum daily construction VOC emissions would remain less than significant under CEQA. This approach resulted in a daily limit of 119 pounds per day for VOCs in applied architectural coatings. This measure would effectively spread out the architectural coating activities over a much greater number of work days (a minimum of 54 Navy development work days and 751 private development work days). The measure is described in Section 3.1.12 of this appendix and in Appendix A (CEQA analysis).

2.1.10 On-Road Vehicle Emission Factors

CalEEMod 2016.3.2 used built-in emission factors from EMission FACtor (EMFAC) 2014 to quantify emissions from on-road vehicles. EMFAC2014 is a CARB emissions inventory model that calculates emissions inventories for motor vehicles operating on roads in California. CARB developed EMFAC2014 to support its regulatory and air quality planning efforts and to meet the Federal Highway Administration's transportation planning requirements (CARB, 2014b). EMFAC2014 was the USEPA-approved on-road vehicle emissions model for California at the time CAPCOA released CalEEMod 2016.3.2 in November 2017.

EMFAC2014 accounts for the GHG-reducing effects from the implementation of Pavley I (Clean Car Standards) and the LCFS. The EMFAC2014 emission factors generally decline over time due to the effects of existing regulations and vehicle fleet turnover. In CalEEMod, the analysis selected EMFAC2014 emission factors representative of San Diego County vehicle fleet characteristics.

CARB released its next version of EMFAC, EMFAC2017, in December 2018. EMFAC2017 included updated emission factors and data on car and truck activities, and emissions reductions associated with new regulations affecting heavy heavy-duty diesel trucks and buses. USEPA-approved EMFAC2017 for SIP and conformity purposes on August 15, 2019. The general conformity regulation (Section 93.159) states that "a grace period of 3 months shall apply during which the motor vehicle emissions model previously specified by USEPA as the most current version may be used unless USEPA announces a longer grace period in the Federal Register."

At the time of this analysis, CalEEMod 2016.3.2, with EMFAC2014 vehicle emission factors, was the current land use emissions estimation model suitable for projects of the size and complexity of the proposed action and alternatives. In February 2021, the South Coast Air Quality Management District provided a beta version of CalEEMod 2020, with EMFAC2017 vehicle emission factors, to a select group of users to test and trouble-shoot the model. However, as of March 2021, CalEEMod 2020 had not yet been finalized or made available for public use. Therefore, for transparency and simplicity of analysis, the Navy elected to use CalEEMod 2016.3.2, which was the best publicly available comprehensive emissions quantification tool available at the time of analysis.

The 2019 SAFE Vehicles Rule revoked California's authority to set its own greenhouse gas emission standards and zero-emission vehicle mandates. This rule would result in higher emissions of certain criteria pollutants and CO_2 from light-duty gasoline vehicles than what was estimated by EMFAC2014. To incorporate the effects of the SAFE Vehicles Rule, CARB published adjustment factors for criteria pollutants in 2019 and for CO_2 in 2020 (CARB, 2019b; CARB, 2020c). These factors are shown in Table D-18. This analysis applied the criteria pollutant adjustment factors to the CalEEMod emission estimates. However, because the quantitative analysis was already complete by the time CARB published the CO_2 adjustment factors, the CO_2e emissions in this analysis do not include the adjustment factors. The adjustment factors would have increased estimated CO_2 emissions from light-duty gasoline vehicles by 5.7 percent in 2026, 9.7 percent in 2030, 13.6 percent in 2035, and 16.7 percent in 2050. This adjustment would not have affected the significance findings of the Draft EIS or Appendix A because the GHG emissions were not compared to a numerical threshold.

Table D-18 CARB Vehicle Emissions Adjustment Factors to Account for the SAFE Vehicles Rule

Year[(1)]	*NO_x*	*TOG Evaporative[(2)]*	*TOG Exhaust[(2)]*	*PM Exhaust[(3)]*	*CO*	*CO_2[(4)]*
2021	1.0001	1.0001	1.0001	1.0012	1.0004	1.0041
2022	1.0002	1.0004	1.0001	1.0034	1.0013	1.0110
2023	1.0005	1.0008	1.0003	1.0066	1.0026	1.0202
2024	1.0010	1.0014	1.0005	1.0105	1.0041	1.0315
2025	1.0016	1.0021	1.0009	1.0149	1.0058	1.0452
2026	1.0022	1.0030	1.0012	1.0183	1.0076	1.0566
2027	1.0029	1.0039	1.0016	1.0208	1.0095	1.0674
2028	1.0036	1.0050	1.0020	1.0224	1.0116	1.0779
2029	1.0044	1.0063	1.0025	1.0241	1.0139	1.0879
2030	1.0052	1.0078	1.0030	1.0260	1.0162	1.0974
2031	1.0061	1.0095	1.0036	1.0279	1.0186	1.1064
2032	1.0071	1.0114	1.0042	1.0299	1.0210	1.1147
2033	1.0081	1.0134	1.0050	1.0320	1.0235	1.1223
2034	1.0091	1.0156	1.0059	1.0341	1.0260	1.1293
2035	1.0103	1.0179	1.0070	1.0362	1.0285	1.1355
2036	1.0114	1.0202	1.0082	1.0382	1.0309	1.1410
2037	1.0125	1.0224	1.0096	1.0400	1.0332	1.1457
2038	1.0137	1.0247	1.0111	1.0418	1.0353	1.1497
2039	1.0148	1.0269	1.0126	1.0435	1.0372	1.1531
2040	1.0158	1.0290	1.0141	1.0449	1.0389	1.1559
2041	1.0167	1.0309	1.0154	1.0461	1.0404	1.1582
2042	1.0176	1.0326	1.0168	1.0471	1.0418	1.1601
2043	1.0183	1.0340	1.0180	1.0480	1.0429	1.1616
2044	1.0190	1.0352	1.0190	1.0487	1.0439	1.1629
2045	1.0195	1.0364	1.0199	1.0494	1.0448	1.1639
2046	1.0200	1.0373	1.0206	1.0499	1.0454	1.1647
2047	1.0204	1.0384	1.0213	1.0504	1.0461	1.1655
2048	1.0208	1.0393	1.0218	1.0508	1.0467	1.1661
2049	1.0209	1.0400	1.0221	1.0510	1.0470	1.1666
2050	1.0210	1.0406	1.0224	1.0512	1.0472	1.1670

Legend: NO_x = nitrogen oxides; TOG = total organic gases; PM = particulate matter; CO = carbon monoxide.

Notes: (1) The adjustment factors apply to the light-duty auto, light-duty truck-1 (LDT1), light-duty truck-2 (LDT2) and medium-duty vehicle categories in CalEEMod.

(2) The TOG adjustment factors were applied to the ROG emission factors in CalEEMod. This study assumed ROG was equivalent to VOC.

(3) The PM adjustment factors were applied to the PM_{10} and $PM_{2.5}$ emission factors in CalEEMod.

(4) The CO_2 adjustment factors were not applied in this analysis because they were published after the quantitative analysis was complete. The factors for all other pollutants in the table were applied.

Source: CARB, 2019a; CARB, 2020c.

On January 20, 2021, President Biden issued EO 13990, which ordered the USEPA and NHTSA to consider, by July 2021, publishing for notice and comment a proposed rule suspending, revising, or rescinding the SAFE Vehicles Rule. Should this rule be rescinded, the emissions of VOC, NO_x, carbon monoxide (CO), PM_{10}, and $PM_{2.5}$ from passenger vehicle trips reported in this analysis would be slightly overstated and therefore conservative.

2.1.11 Hazardous Air Pollutant Speciation of Construction Emissions

The NEPA analysis estimated HAP emissions from proposed construction activities using chemical speciation profiles obtained from the USEPA Speciate 5.1 model and CARB (USEPA, 2020b; CARB, 2020d). The analysis factored emissions of VOCs and PM estimated for each construction source with speciation profiles for total organic gases (TOGs) and PM to derive individual HAP emissions for each source. The NEPA analysis used the amounts of HAP emissions emitted from proposed construction activities as indicators of potential public health impacts.

The analysis chose the following profiles to estimate HAP emissions from proposed construction sources:

- Diesel-powered off-road equipment - Speciate model TOG profile ID 95333 - Diesel Off-road Engines and average of CARB PM profile IDs 6139, 6149, 6159, 6169, and 6179 - Off-road Diesel Vehicle Exhaust.
- Architectural Coatings - Speciate model TOG profile ID 4661 - Industrial surface coating operations - water based.
- Fugitive Dust - Speciate model PM profile ID 4158 - Construction dust.
- Asphalt Paving - Speciate model TOG profile ID 0026 - Asphaltic Concrete - In Place Road Asphalt.
- Delivery and Haul Trucks - Speciate model TOG profile ID 103VBS - Heavy-Duty Diesel with DPF and average of Speciate model PM profile IDs 4945, 4951, 4957, 4961, 4966, and 4969 - Diesel Exhaust – Heavy Heavy-Duty Truck.
- Worker Commuter Vehicles - Speciate model TOG profile ID 8905 - Gasoline Exhaust - E10 gasoline, summer grade, LA92 cycle composite and Speciate model PM profile ID 5566 - Light-Duty Vehicle Exhaust - Gasoline.

2.1.12 Quantified Construction Management Practices and Mitigation Measures

The action alternatives would incorporate several management practices to minimize construction emissions and their associated air quality impacts and human health risks. All management practices are identified and described in Draft EIS Section 3.1.5.9. As discussed in this appendix, the analysis quantified the following management practices for unmitigated construction emissions:

> AQ MGMT-1 (partial). *Fugitive Dust Control Plan.* Watering: Use water spray/mists to minimize dust emissions generated from earthmoving, grading, bulk material handling, and demolition activities and from the movement of vehicles on unpaved roads. Apply water at the end of the work day to areas of soils disturbed during the day.
>
> AQ MGMT-3. *Tier 4 Construction Equipment.* All off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards.

The analysis also quantified the following CEQA mitigation measure to reduce significant levels of daily VOC emissions from construction of Alternatives 4 and 5:

> MM AQ-2. The contractor shall limit the quantity of architectural coatings applied during construction so that VOCs would not exceed 119 pounds per day in the applied coatings.
>
> At the current SDAPCD VOC limit of 50 grams per liter for general flat coatings (SDAPCD Rule 67.0.1 [Architectural Coatings] [SDAPCD, 2021]), this measure equates to a daily limit of 285 gallons of

coatings per day. The daily limit for other coatings would be determined using the following formula: quantity of coating (gallons per day) = 285 x 50/(VOC content of other coatings in grams per liter).

Because the NEPA analysis did not need this measure as mitigation to reduce a significant impact, the NEPA analysis included it as a project element (Management Practice AQ MGMT-5).

All other construction management practices and mitigation measures described in Draft EIS Section 3.1 and Appendix A were not quantified due to model limitations and uncertainty in the degree of implementation.

2.1.13 Estimated Construction Emissions

The tables in Attachment 1.1 of this appendix present the estimated annual construction emissions for Alternatives 1 through 5 that were used in the NEPA analysis (Section 3.1). The tables include criteria pollutant, HAP, and GHG emissions by source and construction year. The tables for Alternatives 4 and 5 were also used in the CEQA analysis (Appendix A).

By convention, total construction GHG emissions were amortized over 30 years before adding them to the operational emissions for comparison to significance thresholds. The amortization approach for construction GHG emissions was based on the South Coast Air Quality Management District's GHG Threshold Working Group Meeting #13 Minutes (SCAQMD, 2009). The resulting annual amortized emissions even out the year-to-year uncertainty and variability in annual emissions and shift the emphasis toward the accumulated total GHG emissions.

The tables in Attachment 1.3 present the estimated maximum daily construction emissions for Alternatives 4 and 5 that were used in the CEQA analysis. The tables include criteria pollutant emissions by source and construction year.

As a default assumption, CalEEMod modeled the construction phases in series, except for foundation drilling, which was added manually and overlapped with the grading and building construction phases. However, given that construction activities for the action alternatives would occur simultaneously on both OTC Site 1 and OTC Site 2 and in multiple areas within each site, construction phases would overlap at various times. Therefore, to estimate a reasonable but conservative maximum daily emissions scenario for Alternatives 4 and 5, several plausible combinations of overlapping phases were evaluated through post-processing calculations performed outside of CalEEMod using the CalEEMod output. The combination producing the highest daily emissions was selected for the analysis.

The following combinations of overlapping phases were evaluated when determining the maximum daily emissions for Navy Development construction in Alternatives 4 and 5:

- Demolition and site preparation
- Grading and utility installation and foundation drilling
- Foundation drilling and building construction
- Grading and utility installation and building construction
- Building construction and paving
- Building construction and architectural coating

The following combinations of overlapping phases were evaluated when determining the maximum daily emissions for Private Development construction in Alternatives 4 and 5:

- Demolition and site preparation

- Grading and utility installation, foundation drilling, and building construction
- Building construction and paving
- Building construction and architectural coating

The tables in Attachment 3.2 present the estimated annual construction and operational emissions for Alternatives 1 and 4 that were used in the general conformity applicability analysis. The tables include VOC and NOx emissions by source and year for those sources subject to general conformity.

The tables in Attachment 4.1 present the estimated annual construction emissions for Alternatives 4 and 5 that were used for the construction HRA in the CEQA analysis. The tables include on-site DPM emissions by source and construction year. The HRA methodology is described below in Section D4 of this appendix.

2.2 Operations Methodology

CalEEMod calculated direct and indirect operational emissions for the following sources:

- Vehicle trips to and from the site generated by the land uses (engine exhaust, particulates from tire wear, brake wear, and road dust)
- Natural gas usage in buildings (combustion exhaust)
- Electricity usage in buildings and parking lots (indirect power plant emissions; GHGs only)
- Architectural coating activities (evaporative VOC emissions from periodic re-painting of buildings and parking lots)
- Use of consumer products (evaporative VOC emissions from cleaning supplies, kitchen aerosols, cosmetics, toiletries, parking lot degreasers, and fertilizers/pesticides)
- Hearth and woodstove usage (combustion exhaust)
- Landscaping equipment (engine exhaust)
- Water usage (indirect power plant emissions associated with supplying and treating water and wastewater, and indirect wastewater decomposition emissions during treatment; GHGs only)
- Solid waste disposal (indirect waste decomposition emissions; GHGs only)
- Mobile equipment (e.g., forklifts, generator sets, off-highway trucks) used during operation (engine exhaust)
- Stationary equipment (e.g., emergency generators, fire pumps) used during operation (engine exhaust)

For electricity use, water use and treatment, and solid waste disposal, CalEEMod quantified only GHG emissions because those activities would produce only indirect emissions. The GHG emissions would be indirect because they would occur from sources owned or controlled by another organization (e.g., power plants, water and wastewater utilities, landfills). CalEEMod quantified criteria pollutant and GHG emissions for all other sources because those emissions would be direct, meaning they would result from direct on-site activities.

To assess NEPA impacts (see Section 3.1) and CEQA impacts (see Appendix A), the analysis included all operational emissions associated with the sources identified in the preceding bullets. For general conformity, the analysis included only the direct and indirect operational emissions from sources that would be practicably controllable and over which the Navy would have continuing program responsibility. Specifically, the general conformity analysis (see Section 3.1.5.2) included (1) all on-site sources associated with the Navy development except stationary equipment, and (2) all off-site vehicle trips associated with the Navy development. The general conformity analysis excluded stationary equipment because the equipment would be issued air permits by the SDAPCD and therefore would not be subject to general conformity. The general conformity analysis also excluded all sources associated with the private development because they would not be practicably controllable by the Navy.

The following methodology describes the key assumptions used in estimating operational emissions for existing conditions and the project alternatives. Project-specific data were used where available. Where project-specific data were lacking, this analysis used a combination of CalEEMod default data for San Diego County and conservative assumptions. Default data were used for portions of the CalEEMod input not specifically discussed below.

2.2.1 Analysis Years

CalEEMod quantified operational emissions for the years 2026, 2030, 2035, and 2050 for each action alternative. Table D-19 provides the operational assumptions for Alternatives 1 through 5 for each analysis year.

CalEEMod quantified operational emissions associated with the No Action Alternative for the same analysis years as Alternatives 1 through 5. For all analysis years, the No Action Alternative was assumed to have the same land uses and number of vehicle trips as existing conditions. The No Action Alternative served as the baseline against which Alternatives 1 through 5 were evaluated for NEPA air quality impacts in Draft EIS Section 3.1 and Alternatives 1 and 4 were evaluated for general conformity applicability in Draft EIS Sections 3.1.5.4 and 3.1.5.7.

Table D-19 Operational Analysis Years and Occupancy Assumptions for Alternatives 1 through 5

Analysis Year	*Assumptions for Navy Development(1)*	*Assumptions for Private Development(2)*
2026	First year of operation; assume 100 percent occupancy	No operation; 0 percent occupancy (under construction)
2030	Continued operation at 100 percent occupancy	Operation at 25 percent occupancy (continued construction)
2035	Continued operation at 100 percent occupancy	Operation at 45 percent occupancy (continued construction)
2050	Continued operation at 100 percent occupancy	Operation at 100 percent occupancy

Notes: (1) The assumptions for Navy Development apply to Alternatives 1 through 5.
(2) The assumptions for Private Development apply to Alternatives 2 through 5. Alternative 1 would have no Private Development.

To identify the overall maximum year of emissions, the analysis interpolated the milestone year operational emissions for each calendar year from 2026 to 2050. The analysis assumed no net change in operational emissions for any action alternative relative to the No Action Alternative prior to 2026.

CalEEMod quantified operational emissions associated with existing conditions at OTC in the year 2020. Existing conditions served as the baseline against which Alternatives 4 and 5 were evaluated for CEQA air quality impacts in Appendix A.

2.2.2 Land Use Elements

Table D-20 shows the CalEEMod land use categories and sizes at buildout for the project alternatives as well as existing conditions. Table D-21 shows the estimated number of residential units by building size category at buildout. Table D-22 shows the assumed residential population at buildout by building size category. Table D-23 shows the estimated number of parking stalls at buildout by CalEEMod parking category. CalEEMod used these values to estimate the default operational quantities of on-road vehicle trips, energy use, architectural coating use, consumer product use, landscaping equipment use, water use, and solid waste production.

The values in Tables D-20 through D-23 were modeled by CalEEMod to represent conditions at full occupancy. These conditions would first occur for the Navy Development in 2026 and for Private Development in 2050 (Alternatives 2 through 5 only). For the intermediate analysis years of 2030 and 2035, the Private Development would operate at approximately 25 and 45 percent of full buildout, respectively. For those analysis years, this analysis modeled the Private Development at full buildout, but with emission factors, vehicle fleet mix, and vehicle trip lengths set at 2030 and 2035 values. The calculated emissions were then multiplied by 25 and 45 percent to estimate the 2030 and 2035 operational emissions.

The approach for modeling vehicle trips associated with the relocated transit center, which would begin operating by 2035, is discussed in more detail below.

Table D-20 Building Floor Space and Paved Surface Area at Buildout, by CalEEMod Category (square feet)

Development Type/CalEEMod Land Use Category	*Existing Conditions, No Action Alternative*	*Alternative 1(1)*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development(2)	-	-	-	-	-	-
Government Office Building(3)	475,386	1,045,520	874,482	874,482	874,482	874,482
Research & Development	515,652	174,865	165,614	165,614	165,614	165,614
Unrefrigerated Warehouse	271,476	481,941	24,172	24,172	24,172	24,172
Other Asphalt Surfaces(4)	726,935	915,253	57,495	57,495	57,495	57,495
Parking Lot (Asphalt)	1,000,000	1,430,415	0	0	0	0
Unenclosed Parking Structure with Elevator	0	0	630,000	630,000	630,000	630,000
Private Development(5)	-	-	-	-	-	-
Apartments Mid-Rise	0	0	2,880,000	2,304,000	2,880,000	2,880,000
Apartments High-Rise	0	0	3,456,000	1,920,000	6,720,000	4,800,000
General Office Building	0	0	1,000,000	650,000	1,350,000	850,000
Hotel	0	0	260,000	160,000	290,000	290,000
Retail - Strip Mall	0	0	180,000	130,000	250,000	200,000
Government (Civic Center) (Transit Center)	0	0	0	0	140,000	140,000
Parking Lot (Asphalt) (Transit Center)	0	0	0	0	175,000	175,000
Unenclosed Parking Structure with Elevator	0	0	4,123,700	2,741,900	6,090,000	4,782,750
Other Asphalt Surfaces(4)	0	0	989,455	1,243,071	786,516	950,182

Legend: - = no data in cell.

Notes: (1) The values shown for Alternative 1 include the amounts newly constructed on OTC Site 1 and the amounts retained without modification on OTC Site 2.
(2) Navy Development was assumed to be fully operational by 2026.
(3) Includes conference/auditorium space.
(4) Other Asphalt Surfaces include areas such as streets and open storage.
(5) Private Development was assumed to be fully operational by 2050.

Table D-21 Number of Residential Units at Buildout by CalEEMod Land Use Category

Building Height[(1)]	*Existing Conditions, No Action Alternative*	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
3-10 Levels (mid-rise)	0	0	3,000	2,400	3,000	3,000
>10 Levels (high-rise)	0	0	3,600	2,000	7,000	5,000
Total	**0**	**0**	**6,600**	**4,400**	**10,000**	**8,000**

Note: (1) CalEEMod defines mid-rise and high-rise buildings differently than Draft EIS Section 2.5. The CalEEMod definitions are shown in this table.

Source: M. Carpenter, KTU+A, personal communication, April 13, 2020.

Table D-22 Residential Population at Buildout by CalEEMod Land Use Category

Building Height	*Existing Conditions, No Action Alternative*	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
3-10 Levels (mid-rise)(1)	0	0	4,309	3,447	4,309	4,309
>10 Levels (high-rise)(1)	0	0	5,171	2,873	10,055	7,182
Total	**0**	**0**	**9,480**	**6,320**	**14,364**	**11,491**

Note: (1) Populations were apportioned to the mid-rise and high-rise categories in proportion to their number of residential units in Table D-21.

Source: Socioeconomics study (Section 3.5).

Table D-23 Number of Parking Stalls at Buildout by CalEEMod Land Use Category

CalEEMod Land Use Category	*Existing Conditions, No Action Alternative*	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development	-	-	-	-	-	-
Multi-story concrete structure	0	0	2,000	2,000	2,000	2,000
Asphalt Lot	2,500	4,541(1)	0	0	0	0
Private Development	-	-	-	-	-	-
Multi-story concrete structure	0	0	11,782	7,834	17,400	13,665
Asphalt Lot (Transit Center)	0	0	0	0	500	500

Legend: - = no data in cell.

Note: (1) The value for Alternative 1 includes 3,180 new parking spaces constructed on OTC Site 1 and 1,361 existing spaces retained on OTC Site 2.

Source: M. Carpenter, KTU+A, personal communication, April 13, 2020, except values for existing conditions and No Action Alternative were estimated by reviewing aerial photographs.

2.2.3 Operational Vehicle Trips

Table D-24 shows the number of daily weekday vehicle trips the analysis modeled in CalEEMod for operation of the project scenarios at buildout. The trip data were obtained from the Draft EIS traffic study. In developing the data, the traffic study included trip reductions to account for transit, bicycle, and pedestrian modes of travel and a mixed-use benefit.

The trip data were entered into CalEEMod by adjusting the default trip rates to force the total number of weekday trips to equal the displayed values. Weekend trips were scaled from the weekday trips in the same relative proportion as the CalEEMod default values. Trips associated with the relocated transit center under Alternatives 4 and 5 are not shown in the table because they were modeled separately.

Table D-24 Operational Weekday Vehicle Trips at Buildout, by CalEEMod Land Use Category (trips/day)

Development Type/CalEEMod Land Use Category[1]	*Existing Conditions, No Action Alternative*	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Alternative 5*
Navy Development[2]	[3]	-	-	-	-	-
Government Office Building	6,132	7,566	4,301	4,301	4,301	4,301
Research & Development	783	149	96	96	96	96
Unrefrigerated Warehouse	85	85	3	3	3	3
Subtotal	**7,000**	**7,800**	**4,400**	**4,400**	**4,400**	**4,400**
Private Development[4][5]	-	-	-	-	-	-
Apartments Mid-Rise	0	0	19,804	15,236	19,830	19,123
Apartments High-Rise	0	0	15,009	8,019	29,223	20,130
General Office Building	0	0	8,462	6,123	9,874	6,962
Hotel	0	0	3,516	2,202	3,679	3,680
Retail - Strip Mall	0	0	7,754	5,611	10,015	8,014
Subtotal	**0**	**0**	**54,546**	**37,192**	**72,622**	**57,909**
Total	**7,000**	**7,800**	**58,946**	**41,592**	**77,022**	**62,309**

Legend: - = no data in cell.

Notes: [1] Parking lot land uses are not shown because they have no associated trips in the CalEEMod methodology. CalEEMod assigns all trips to the residential and commercial land uses.

[2] The traffic study estimated only total trips for the Navy Development. For the CalEEMod inputs, the trips were apportioned to the Navy land use categories in the same relative proportions as the default CalEEMod trips.

[3] Values represent weekday one-way trips. Saturday and Sunday trips were scaled to the same relative proportions as the default CalEEMod Saturday and Sunday trips.

[4] Trip generation values for Private Development include reductions to account for transit, bicycle, and pedestrian modes of travel and a mixed-use benefit. For transit, bicycle, and pedestrian modes of travel, the credit is -1,126, -755, -6,663, and -5,321 daily trips for Alternatives 2, 3, 4, and 5, respectively. For the mixed-use benefit, the credit is -6,374, -4,274, -9,543, and -7,583 daily trips for Alternatives 2, 3, 4, and 5, respectively.

[5] The Transit Center is not shown because its operational vehicle trips were modeled separately. See Table D-31 for the Transit Center trip assumptions.

Source: Traffic Study (Appendix E).

2.2.4 Operational Trip Lengths

Tables D-25 through D-30 present the average vehicle trip lengths associated with operation of OTC for the existing conditions scenario and project alternatives. The analysis used these trip lengths in lieu of the default trip lengths in CalEEMod. They were derived from site- and community-specific SANDAG data provided by the traffic study (LLG Engineers, K.C. Yellapu, personal communications, May 12, 2020; LLG Engineers, J. Boarman, personal communications, May 6, 2020). These data show a downward trend in average trip length over time due to the availability of closer destinations as the area becomes more densely developed.

In general, the analysis modeled each alternative separately in CalEEMod. However, because the Navy development would be nearly identical for Alternatives 2 through 5, the analysis modeled the Navy development under Alternatives 2 through 5 as a single scenario. Nonresidential trip lengths for Alternative 4 (Table D-29) were selected for the scenario because they would be slightly higher and therefore slightly more conservative than the other alternatives. The resulting CalEEMod output was used for the Navy operational emissions for each of Alternatives 2, 3, 4, and 5.

Table D-25 Average Operational Trip Lengths for Existing Conditions and the No Action Alternative

Year	*Daily VMT per Employee(1)(2)*	*Daily Trips per Employee(1)(3)*	*Average Nonresidential Trip Length (mi/trip)*
2020	21.4	2.8	7.7
2026	19.8	2.8	7.1
2030	18.8	2.8	6.7
2035	17.5	2.8	6.3
2050	13.6	2.8	4.9

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (LLG, John Boarman, personal communications, May 6, 2020).
(2) VMT per employee in years 2020 through 2035 were interpolated from 2012 and 2050 data. Data for 2012 are from the traffic study and are based on SANDAG data representative of the Midway-Pacific Highway Community (LLG, K.C. Yellapu, personal communications, May 12, 2020).
(3) The 2050 daily trips per employee were assumed to be representative of all analysis years.

Table D-26 Average Operational Trip Lengths for Alternative 1

Year	*Daily VMT per Employee(1)(2)(3)*	*Daily Trips per Employee(1)(2)(3)*	*Average Nonresidential Trip Length (mi/trip)*
2020	21.4	2.8	7.7
2026	19.8	2.8	7.1
2030	18.8	2.8	6.7
2035	17.5	2.8	6.3
2050	13.6	2.8	4.9

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Data for 2020 are from Table D-25 (existing conditions).
(2) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (LLG, John Boarman, personal communications, May 6, 2020).
(3) Intermediate years were interpolated linearly.

Table D-27 Average Operational Trip Lengths for Alternative 2

Year	Daily VMT per Resident(1)(2)(3)	Daily VMT per Employee(2)(3)(4)	Daily Trips per Resident(2)(5)	Daily Trips per Employee(2)(3)(4)	Average Residential Trip Length (mi/trip)	Average Nonresidential Trip Length (mi/trip)
2020	12.4	21.4	3.6	2.8	3.5	7.7
2026	11.2	19.7	3.6	2.7	3.1	7.2
2030	10.5	18.5	3.6	2.7	2.9	6.9
2035	9.5	17.1	3.6	2.6	2.7	6.5
2050	6.6	12.8	3.6	2.5	1.8	5.1

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Daily VMT per resident in 2020 is from the traffic study and is conservatively based on 2012 SANDAG data representative of the Midway-Pacific Highway Community (LLG, K.C. Yellapu, personal communications, May 12, 2020).

(2) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (LLG, John Boarman, personal communications, May 6, 2020).

(3) Intermediate years were interpolated linearly.

(4) Nonresidential data for 2020 are from Table D-25 (existing conditions).

(5) The 2050 daily trips per resident were assumed to be representative of all analysis years.

Table D-28 Average Operational Trip Lengths for Alternative 3

Year	Daily VMT per Resident(1)(2)(3)	Daily VMT per Employee(2)(3)(4)	Daily Trips per Resident(1)(2(3	Daily Trips per Employee(2)(3)(4)	Average Residential Trip Length (mi/trip)	Average Nonresidential Trip Length (mi/trip)
2020	12.4	21.4	3.6	2.8	3.5	7.7
2026	11.5	19.8	3.6	2.8	3.2	7.2
2030	10.9	18.7	3.6	2.7	3.0	6.9
2035	10.2	17.4	3.6	2.7	2.8	6.5
2050	8.0	13.5	3.6	2.6	2.2	5.2

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Residential data for 2020 are from Table D-27 to ensure that all alternatives interpolate from the same 2020 starting point.

(2) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (J. Boarman, LLG, personal communication, May 6, 2020).

(3) Intermediate years were interpolated linearly.

(4) Nonresidential data for 2020 are from Table D-25 (existing conditions).

Table D-29 Average Operational Trip Lengths for Alternative 4

Year	*Daily VMT per Resident(1)(2)(3)*	*Daily VMT per Employee(2)(3)(4)*	*Daily Trips per Resident(1)(2)(3*	*Daily Trips per Employee(2)(3)(4)*	*Average Residential Trip Length (mi/trip)*	*Average Nonresidential Trip Length (mi/trip)*
2020	12.4	21.4	3.6	2.8	3.5	7.7
2026	10.8	19.3	3.5	2.7	3.1	7.3
2030	9.8	18.0	3.5	2.6	2.8	7.0
2035	8.4	16.2	3.5	2.4	2.4	6.6
2050	4.5	11.1	3.4	2.1	1.3	5.3

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Residential data for 2020 are from Table D-27 to ensure that all alternatives interpolate from the same 2020 starting point.

(2) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (J. Boarman, LLG, personal communication, May 6, 2020).

(3) Intermediate years were interpolated linearly.

(4) Nonresidential data for 2020 are from Table D-25 (existing conditions).

Table D-30 Average Operational Trip Lengths for Alternative 5

Year	*Daily VMT per Resident(1)(2)(3)*	*Daily VMT per Employee(2)(3)(4)*	*Daily Trips per Resident(1)(2)(3*	*Daily Trips per Employee(2)(3)(4)*	*Average Residential Trip Length (mi/trip)*	*Average Nonresidential Trip Length (mi/trip)*
2020	12.4	21.4	3.6	2.8	3.5	7.7
2026	11.0	19.4	3.5	2.7	3.1	7.2
2030	10.0	18.1	3.5	2.6	2.8	6.9
2035	8.8	16.4	3.5	2.5	2.5	6.5
2050	5.3	11.5	3.5	2.2	1.5	5.2

Legend: VMT = vehicle miles traveled; mi/trip = miles per trip.

Notes: (1) Residential data for 2020 are from Table D-27 to ensure that all alternatives interpolate from the same 2020 starting point.

(2) Data for 2050 are from the traffic study and are based on SANDAG data for the OTC (John Boarman, personal communication, May 6, 2020).

(3) Intermediate years were interpolated linearly.

(4) Nonresidential data for 2020 are from Table D-25 (existing conditions).

2.2.5 Transit Center Trips

Table D-31 shows the number of daily weekday vehicle trips modeled in CalEEMod for operation of the relocated transit center under Alternatives 4 and 5. The trip data were obtained from the EIS traffic study. This analysis adjusted the default trip rates in CalEEMod to force the number of trips to equal the traffic study values. The weekday trips were also used for Saturday and Sunday trips.

Table D-31 Operational Daily Vehicle Trips for the Transit Center for Alternatives 4 and 5

Modeling Scenario[(1)]	*Daily Trips, 2035[(2)]*	*Daily Trips, 2050[(2)]*
Absolute Number of Trips (for informational purposes)	3,010	3,220
Increased Number of Trips Relative to 2020 Existing Conditions (for CEQA)	210	420

Notes: (1) The number of trips would be the same for Alternatives 4 and 5. The remaining alternatives would not include a transit center at the OTC.
(2) The daily trips were modeled seven days per week.
Source: Traffic study.

Because the transit center would move from its current location to OTC under Alternatives 4 and 5, the method of analysis required transit center operational vehicle trips to be modeled separately from the rest of Alternatives 4 and 5. All other types of operational emissions associated with the transit center (energy consumption, architectural coating, consumer products, landscaping, water usage, and solid waste disposal) were included in the CalEEMod operational runs for the rest of Alternatives 4 and 5.

Transit center operational vehicle trips were modeled differently under NEPA and CEQA because of the different baselines. The NEPA baseline is the No Action Alternative, evaluated in the same future analysis year as the action alternatives. Therefore, the proposed relocation of the transit center would result in essentially no change in emissions relative to the NEPA baseline because the vehicle trips would merely shift from one location to another. (Section 3.1 addresses the potential effects on local carbon monoxide ambient concentrations resulting from the Proposed Action and alternatives, including the Transit Center.) As a result, it was unnecessary for the NEPA analysis to model transit center trips in CalEEMod because there would be no emissions impact from the shift in location. However, for informational purposes only, total transit center trips were modeled in CalEEMod to show the magnitude of emissions associated with the transit center.

The CEQA baseline is 2020 existing conditions. Therefore, for CEQA, the predicted increases in transit center vehicle trips in the future analysis years, relative to 2020 conditions, were modeled in CalEEMod. The CEQA analysis conservatively attributed the resulting emissions increases to Alternatives 4 and 5 even though the predicted trip increases would occur regardless of whether the transit center shifts locations.

SANDAG provided an estimated vehicle trip length of 6.52 miles per trip for the transit center (Kirsten Uchitel, personal communication, April 29, 2020). The default trip lengths in CalEEMod were replaced with this modified trip length.

2.2.6 Vehicle Emission Factors

This analysis used EMFAC2014 emission factors, adjusted per the SAFE Vehicles Rule, in CalEEMod to calculate the emissions from operational vehicle trips. Section D3.1.10, above, describes the rationale for the selection of CalEEMod 2016.3.2 with built-in EMFAC2014 emission factors as well as the methodology for applying the adjustment factors. No SAFE Vehicles Rule adjustments were necessary for 2020 existing conditions because the effects of the rule started in 2021.

2.2.7 Energy Use

CalEEMod estimated direct criteria pollutant and GHG emissions from the combustion of natural gas for space and water heating in buildings. CalEEMod also estimated indirect GHG emissions from electricity use by the residential and nonresidential land uses. At the time of this analysis, the estimates for natural gas and electricity use associated with the project alternatives in the infrastructure study (Draft EIS Section 3.11) were not final. Therefore, for the new land uses associated with the action alternatives, this analysis used CalEEMod default energy consumption rates that assume compliance with the California Energy Code (Title 24, Part 6 of the CCR). For existing conditions, the No Action Alternative, and the unmodified land uses in Alternative 1 (on OTC Site 2), this analysis used CalEEMod default energy consumption rates that are based on default historical data. A comparison of Tables D-2 and D-20 shows that approximately 30 percent of the warehouse and parking lot space under Alternative 1 at buildout would be unmodified and therefore represented by historical data rather than Title 24.

CalEEMod used default San Diego Gas and Electric (SDG&E) energy intensity factors (i.e., the amount of CO_2, methane (CH_4), and nitrous oxide (N_2O) per megawatt-hour) to quantify indirect GHG emissions associated with electricity use. The current state mandate for renewable energy (Renewables Portfolio Standard) is 50 percent by 2026 and 60 percent by 2030. However, CalEEMod's default energy intensity factors assume only a 10.2 percent procurement of renewable energy for all analysis years (SDG&E, 2011). Sempra Energy's corporate sustainability report for 2018 (Sempra Energy, 2019) indicates that SDG&E had already achieved 45 percent renewable energy by 2018. Therefore, this analysis modified the SDG&E energy intensity factors in CalEEMod to reflect 45 percent renewables in 2020 (assuming 2020 is similar to 2018), 50 percent in 2026, and 60 percent in 2030, 2035, and 2050. Table D-32 presents the modified SDG&E energy intensity factors that the analysis used in CalEEMod.

Table D-32 San Diego Gas & Electric Intensity Factors

Year	*Percent of Total Energy from Renewables[1]*	*CO_2 (lb./MWh)*	*CH_4 (lb/MWh)[2]*	*N_2O (lb/MWh)[2]*
2009[3]	*10.2%*	720.49	0.029	0.006
2018 to 2020[4]	*45%*	480	0.019	0.004
2026[5]	*50%*	436	0.018	0.0036
2030 to 2050[6]	*60%*	349	0.014	0.0029

Legend: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; lb/MWh = pounds per megawatt-hour.

Notes: (1) The percent renewables for 2009 and 2018 are actual values. The percent renewables for 2026 and 2030-2050 are per the California Renewables Portfolio Standard, which mandates 50 percent renewables by 2026 and 60 percent renewables by 2030.

(2) CH_4 and N_2O factors for 2018 and later are scaled from the CO_2 factor in proportion to the 2009 factors.

(3) The 2009 intensity factors are the CalEEMod default factors for SDG&E.

(4) The 2018 CO_2 factor is the most recent available factor for SDG&E, from Page 62 of Sempra Energy's *2018 Corporate Sustainability Report* (Sempra Energy, 2019). Assume the 2018 factors are representative of 2020 factors.

(5) The 2026 CO_2 factor is scaled from the 2018 factor by the following formula: $[480/(1-0.45)]\times(1-0.5)$.

(6) The 2030 to 2050 CO_2 factor is scaled from the 2018 factor by the following formula: $[480/(1-0.45)]\times(1-0.60)$.

2.2.8 Consumer Products

The CalEEMod default emission factor for consumer products usage is based on a statewide inventory of VOC emissions and statewide building area (CAPCOA, 2017). This analysis adjusted the default emission factor to a San Diego County-specific value. Appendix H of the PEIR for the Midway-Pacific Highway Community Plan Update shows the derivation of the adjusted value (City of San Diego, 2018b). The San Diego County-specific consumer product emission factor of ROG was estimated to be 0.0000165 pound/square-foot/day, based on San Diego County daily emissions of consumer products and county-wide building square footage data. This analysis assumed that ROG is equivalent to VOC.

2.2.9 Architectural Coating

CalEEMod estimated the interior and exterior building surface areas and asphalt surface area to be re-painted annually during operation, based on the land use sizes shown in Table D-20. CalEEMod assumed a default 10 percent annual reapplication rate for operations. The analysis used an architectural coating VOC limit of 50 grams per liter for interior (flat) coatings and 100 grams per liter for exterior (non-flat) and pavement coatings to reflect the requirements of SDAPCD Rule 67.0.1.

2.2.10 Hearths and Woodstoves

In accordance with Management Practice AQ MGMT-18, the residential uses of the Proposed Action and alternatives would have no hearths or fireplaces. Therefore, the analysis set the CalEEMod hearth and woodstove usages to zero.

2.2.11 Landscaping Equipment

The analysis quantified operational landscaping emissions outside of CalEEMod using emission factors developed in Appendices H and I of the PEIR for the Midway-Pacific Highway Community Plan Update (City of San Diego, 2018b). Table D-33 presents the landscaping emission factors. The emission factors are based on CARB daily emission estimates for lawn and garden equipment for San Diego County and San Diego regional nonresidential and residential development acreages. Because they are on a per-acre basis, the off-model emission factors are more representative of urban and higher-density land uses than the CalEEMod default emission factors. The CalEEMod default emission factors are on a per-dwelling unit or per building space basis and therefore tend to overestimate landscaping emissions for high-rise developments with a lot of units or building space.

This analysis applied the County-specific landscaping emission factors to all constructed acreages shown in Table D-33. Maximum daily emissions included an additional factor of 7, which assumed that all OTC landscaping emissions would occur on one day per week (i.e., seven days-worth of average daily emissions would occur on one day each week). Landscaping emissions were assumed to be negligible for existing conditions, the No Action Alternative, and OTC Site 2 under Alternative 1 because the existing OTC has relatively few landscaped areas that would require the regular use of landscaping combustion equipment.

Table D-33 Landscaping Emission Factors for the San Diego Region

Land Use Category	*VOC (lb/day per acre)*	*NO_x (lb/day per acre)*	*CO (lb/day per acre)*	*SO_x (lb/day per acre)*	*PM_{10} (lb/day per acre)*	*$PM_{2.5}$ (lb/day per acre)*	*CO_2e (MT/yr per acre)*
Residential	0.02059	0.00098	0.09875	0	0.00022	0.00016	0.04227
Commercial	0.00444	0.00055	0.04285	0	0.0001	0.00008	0.04227

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; CO_2e = carbon dioxide equivalent; lb/day = pounds per day; MT/yr = metric tons per year.

Source: Appendices H and I of the PEIR for the Midway-Pacific Highway Community Plan Update (City of San Diego, 2018b).

2.2.12 Water and Wastewater

The amount of water used and wastewater generated by a land use has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat water and wastewater. CalEEMod used the SDG&E electricity intensity factors in Table D-32 to quantify the GHG emissions associated with the energy used to transport the water. In addition to the indirect GHG emissions associated with energy use, CalEEMod also quantified indirect CH_4 and N_2O emissions produced from the wastewater treatment process using default assumptions.

At the time of this analysis, the estimates for water demand and wastewater generation associated with the Proposed Action and alternatives in the infrastructure study (Draft EIS Section 3.11) were not final. Therefore, this analysis used the CalEEMod default assumptions with the following adjustment. To incorporate the CalGreen standards, this analysis applied a 20 percent reduction to the default indoor water use for the new land uses associated with Alternatives 1 through 5. No reduction was applied to existing conditions, the No Action Alternative, and the unmodified land uses in Alternative 1 (on OTC Site 2).

Additionally, in accordance with Management Practice AQ MGMT-11, Alternatives 1 through 5 would use water-efficient landscape irrigation systems. Therefore, CalEEMod assumed a default 6.1 percent reduction in outdoor water use per this measure. Although CalEEMod classified this measure as mitigation, this analysis treated it as a project element.

2.2.13 Solid Waste

The disposal of solid waste produces indirect GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. At the time of this analysis, the estimates for annual solid waste generation during operation of the project alternatives in the hazardous materials study (Draft EIS Section 3.7) were not final. Therefore, this analysis used CalEEMod default assumptions, which are based on annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle). CalEEMod assumed a default 50 percent diversion of solid waste from landfills through reduction, recycling, and compost programs. This assumption is conservative because AB 341 mandated that 75 percent of the solid waste generated be reduced, recycled, or composted by 2020. To be consistent with the hazardous materials study, this analysis did not assume a 75 percent diversion rate.

2.2.14 Operational Equipment

The Navy currently operates, and plans to operate, mobile and stationary equipment at OTC. Table D-34 lists the anticipated operational equipment by alternative. Alternatives 2 through 5 would have smaller warehouse and laydown areas and therefore less mobile equipment than the existing conditions scenario, No Action Alternative, and Alternative 1. In accordance with Management Practice AQ MGMT-9, all operational diesel equipment greater than 50 horsepower (i.e., the diesel forklift, generator set, and emergency standby generators) used for Alternatives 1 through 5 would meet Tier 4 nonroad emission standards.

The initial CalEEMod runs for Alternatives 1 through 5 assumed default, non-Tier 4 emission factors for all operational equipment. For the mobile Tier 4 equipment, the analysis performed subsequent CalEEMod runs, included in this appendix, to determine the emission reductions. For the stationary Tier 4 equipment, scaling factors were applied to the CalEEMod outputs to determine the emission reductions. Tables D-A1.2-18 through D-A1.2-20 in Attachment 1.2 show the derivation of the emission reductions associated with the Tier 4 operational equipment. The pre-mitigation emissions tables presented for Alternatives 1 through 5 in Section 3.1 and Appendix A include these emission reductions.

Table D-34 Operational Equipment Activity Data for Navy Development

Equipment Type	*Fuel*	*Equip. Count, Existing and No Action Alternative*	*Equip. Count, Alternative 1*	*Equip. Count, Alternatives2-5*	*Daily Usage Hours per Day*	*Annual Usage Days per Year*	*Horsepower Rating*	*Engine Load Factor (unitless)*
Mobile Equipment[1]	-	-	-	-	-	-	-	-
Forklift	Propane[2]	6	6	2	8	260	89	0.2
Forklift	Diesel	4	4	1	8	260	89	0.2
Generator Set	Diesel	1	1	0	2	260	84	0.74
Off-Highway Truck	Diesel	2	2	0	8	260	50[3]	0.38
Stationary Equipment[4]	-	-	-	-	-	-	-	-
Emergency Standby Generator	Diesel	1	1	1	5	20	165	0.73
Emergency Standby Generator	Diesel	1	1	1	5	20	187	0.73

Legend: - = no data in cell; Alt. = Alternative; hr./day = hours per day; days/year = days per year; hp = horsepower.

Notes: [1]Operating days per year, rated horsepower, and load factors for mobile equipment are CalEEMod defaults unless otherwise noted. All other values are site-specific.

[2] Compressed natural gas was selected as the most similar available option in CalEEMod.

[3] Horsepower rating was modified to a value typical of a John Deere Gator utility vehicle.

[4] Load factors for the stationary equipment are CalEEMod defaults. All other values for stationary equipment are site-specific. The SDAPCD maintains operating permits for the existing stationary equipment.

Sources: For mobile equipment: Navy (R. Desmarais, NAVWAR, personal communications, April 21, 2020) and Navy (K. Ketron, Naval Information Warfare Center Pacific, personal communications, April 23, 2020). For stationary equipment: Navy (R. Chichester, Naval Base Point Loma, personal communications, April 14, 2020).

2.2.15 Land Use Change and Carbon Sequestration

This analysis assumed no GHG impacts related to land use changes or carbon sequestration.

2.2.16 Hazardous Air Pollutant Speciation of Operational Emissions

The NEPA analysis estimated HAP emissions from proposed operations activities using chemical speciation profiles obtained from the USEPA Speciate 5.1 model and CARB. The analysis factored emissions of VOCs and PM estimated for each operations source with speciation profiles for TOGs and PM to derive individual HAP emissions for each source. The NEPA analysis used the amounts of HAP emissions emitted from proposed operations activities as indicators of potential public health impacts.

The analysis chose the following profiles to estimate HAP emissions from proposed operations sources:

- Commuter Vehicles - Speciate model TOG profile ID 8905 - Gasoline Exhaust - E10 gasoline, summer grade, LA92 cycle composite and Speciate model PM profile ID 5566 - Light-Duty Vehicle Exhaust - Gasoline.
- Consumer products - Speciate model TOG profile ID 3040 - Consumer Products: Multipurpose Solvents.
- Architectural Coatings - Speciate model TOG profile ID 4661 - Industrial surface coating operations - water based.
- Landscaping Equipment - Speciate model TOG profile ID 95506 - 4-Stroke Small Off-road Engine Exhaust - MTBE Gasoline.
- Natural Gas Use - Speciate model TOG profile ID 0003 - External Combustion Boiler - Natural Gas and Speciate model PM profile 91156 - Residential Natural Gas Combustion - Composite.

2.2.17 Quantified Operational Management Practices

The action alternatives would incorporate several sustainability-oriented management practices that are consistent with the City of San Diego CAP and its implementing CAP Consistency Checklist (City of San Diego, 2016a; City of San Diego, 2017), as well as the City's Midway-Pacific Highway Community Plan (City of San Diego, 2018a). All design features are identified and described in Draft EIS Section 3.1.5.9. As discussed in this appendix, the analysis quantified the following design features for unmitigated operational emissions:

AQ MGMT-9. *Tier 4 Operational Equipment.* All off-road diesel-powered equipment greater than 50 horsepower used for operations would meet USEPA Nonroad Final Tier 4 emission standards.

AQ MGMT-11. *Sustainable Landscape Design.* The project would incorporate sustainable landscape design where feasible, including:

- Plant trees to provide shade and CO_2 absorption
- Use drought-tolerant native vegetation
- Reduce use of lawn types that require high levels of irrigation
- Use high-efficiency irrigation technology or recycled site water
- Design buildings to capture and store rainwater for landscape irrigation

No other operational management practice described in EIS Section 3.1.5.9 was quantified due to model limitations and uncertainties in the degree of implementation. However, the operational vehicle trip rates developed by the EIS traffic study and used in the air quality analysis (see Section D3.2.3) took into consideration some of the vehicle trip reduction techniques proposed in management practices AQ MGMT-23 through AQ MGMT-30 (such as transit, bicycle, and pedestrian measures).

2.2.18 Estimated Operational Emissions

The tables in Attachment 1.2 of this appendix present the estimated annual operational emissions for the existing conditions scenario, the No Action Alternative, and Alternatives 1 through 5 that were used in the NEPA analysis (Section 3.1). The tables include criteria pollutant, HAP, and GHG emissions by source and operational analysis year. The tables for existing conditions and Alternatives 4 and 5 were also used in the CEQA analysis (Appendix A).

The tables in Attachment 1.4 present the estimated maximum daily operational emissions for existing conditions and Alternatives 4 and 5 that were used in the CEQA analysis. The tables include criteria pollutant emissions by source and operational analysis year.

The tables in Attachment 3.2 present the estimated annual construction and operational emissions for Alternatives 1 and 4 that were used in the general conformity applicability analysis. The tables include VOC and NOx emissions by source and year for those sources subject to general conformity.

3 Construction HRA for the CEQA Analysis

This appendix describes the methods and results of a HRA of TAC emissions associated with construction of OTC project Alternatives 4 and 5. The HRA is a Tier 1 risk assessment for the CEQA analysis in accordance with the California Office of Environmental Health Hazard Assessment's (OEHHA's) Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015). The HRA also followed supplemental guidance issued by SDAPCD (SDAPCD, 2019). The HRA calculated cancer and non-cancer risks to the community surrounding OTC associated with TAC emissions from construction-related equipment and trucks operating on-site during construction of the project.

TACs are compounds that are known or suspected to cause adverse health effects from human exposure. In this HRA, the TAC of potential concern was DPM. Under OEHHA risk assessment guidance, DPM is used as a surrogate for the complex mixture of chemicals that make up whole diesel exhaust. DPM is the main driver of cancer risk from construction equipment.

The HRA used a five-step process to estimate incremental health impact results: (1) quantify construction-related DPM emissions; (2) identify ground-level receptor locations that may be affected by emissions, including a regular receptor grid as well as specific sensitive receptor locations nearby such as schools, hospitals, and child care centers; (3) perform dispersion modeling analyses to estimate ambient DPM concentrations at each receptor location; and (4) quantify the potential health risks at each receptor location and compare to significance criteria. The following sections provide additional details on the HRA methodology.

3.1 Significance Criteria

The City of San Diego does not specify health risk thresholds for TAC exposure in its CEQA guidelines (City of San Diego, 2016b). SDAPCD Rule 1210 (SDAPCD, 2013) provides the following health risk public notification thresholds for permitted stationary sources, which are based on the OEHHA guidance:

- Maximum incremental cancer risk equal to or greater than 10 chances in one million. Incremental cancer risk is the increased chance that a person would develop cancer from exposure to project-generated TAC emissions over a period of 30 years for a resident or 25 years for a worker.
- Cancer burden equal to or greater than 1.0. Cancer burden is the estimated additional number of persons within the project's zone of impact that would contract cancer over a 70-year lifetime because of exposure to project-generated TAC emissions.
- Total chronic non-cancer health hazard index equal to or greater than 1.0. The chronic non-cancer health hazard index is a ratio of the project's long-term (i.e., 1-year or longer) average ambient TAC concentrations relative to the reference concentrations below which adverse health effects would not be expected to occur.

This HRA evaluated health risks relative to these thresholds.

3.2 Quantification of Emissions

This HRA quantified on-site construction-related DPM emissions using the methodology described above (see Appendix D3). The HRA used the PM_{10} diesel engine exhaust emissions estimated by CalEEMod as equivalent to DPM emissions. The HRA assumed all construction equipment, haul trucks, and vendor vehicles would be diesel-powered.

The analysis assumed all construction equipment emissions would occur on-site. To estimate the on-site emissions from haul trucks and vendor vehicles, the analysis scaled the total trip emissions by multiplying by the ratio of on-site driving distance to total driving distance. As specified in Management Practice AQ MGMT-3, the quantification of DPM emissions assumed all off-road diesel-powered construction equipment greater than 50 horsepower would meet USEPA Nonroad Final Tier 4 emission standards. Tables D-35 and D-36 present the annual on-site DPM emissions associated with construction of Alternatives 4 and 5, respectively. Attachment 4.1 of this appendix shows the scaling methodology for on-site haul truck and vendor trip emissions.

Table D-35 Annual On-Site Construction DPM Emissions, Alternative 4

Year	*Off-Road Equipment (lbs.)*	*Haul Trucks (lbs.)(1)*	*Vendor Trips (lbs.)(1)*
2021	100.9	0.02	0.02
2022	105.8	0.00	0.02
2023	96.8	0.00	0.01
2024	89.4	0.00	0.01
2025	70.7	0.00	0.01
2026	106.9	0.07	0.12
2027	188.2	0.00	0.25
2028	184.4	0.00	0.24
2029	159.4	0.00	0.20
2030	129.6	0.03	0.22
2031	127.6	0.00	0.23
2032	128.0	0.00	0.22
2033	127.0	0.00	0.22
2034	113.5	0.00	0.19
2035	106.9	0.07	0.17
2036	119.1	0.00	0.22
2037	107.8	0.00	0.22
2038	107.8	0.00	0.22
2039	107.4	0.00	0.22
2040	101.8	0.00	0.21
2041	101.8	0.00	0.21
2042	101.8	0.00	0.21
2043	101.8	0.00	0.21
2044	101.8	0.00	0.21
2045	101.4	0.00	0.21
2046	101.8	0.00	0.21
2047	101.8	0.00	0.21
2048	102.2	0.00	0.21
2049	72.8	0.00	0.14
Total	**3,266.1**	**0.19**	**5.03**

Legend: lbs. = pounds.
Note: (1) On-site emissions from haul trucks and vendor trips were scaled from the total trip emissions by multiplying by the ratio of on-site to total driving distance.

Table D-36 Annual On-Site Construction DPM Emissions, Alternative 5

Year	*Off-Road Equipment (lbs.)*	*Haul Trucks (lbs.)*[1]	*Vendor Trips (lbs.)*[1]
2021	100.9	0.02	0.02
2022	105.8	0.00	0.02
2023	96.8	0.00	0.01
2024	89.4	0.00	0.01
2025	70.7	0.00	0.01
2026	87.5	0.07	0.10
2027	147.7	0.00	0.20
2028	143.4	0.00	0.19
2029	124.2	0.00	0.16
2030	104.0	0.02	0.18
2031	99.2	0.00	0.18
2032	99.6	0.00	0.18
2033	98.8	0.00	0.18
2034	88.4	0.00	0.16
2035	88.5	0.06	0.14
2036	96.3	0.00	0.18
2037	83.8	0.00	0.17
2038	83.8	0.00	0.17
2039	83.6	0.00	0.17
2040	79.2	0.00	0.17
2041	79.2	0.00	0.17
2042	79.2	0.00	0.17
2043	79.2	0.00	0.17
2044	79.2	0.00	0.17
2045	78.8	0.00	0.17
2046	79.2	0.00	0.17
2047	79.2	0.00	0.17
2048	79.6	0.00	0.17
2049	57.1	0.00	0.11
Total	**2,662.3**	**0.2**	**4.1**

Legend: lbs. = pounds.
Note: [1] On-site emissions from haul trucks and vendor trips were scaled from the total trip emissions by multiplying by the ratio of on-site to total driving distance.

3.3 Air Dispersion Modeling Methodology

The HRA performed air dispersion modeling to calculate the concentrations of DPM at receptors in the OTC vicinity during construction. The following sections describe the methodology used for modeling, including model selection, source characterization, meteorological data, and receptor placement.

3.3.1 Model Selection

The HRA performed air dispersion modeling using the USEPA AERMOD dispersion model, version 19191 (USEPA, 2019), based on the *Guideline on Air Quality Models* (USEPA, 2017). AERMOD predicts ambient pollutant concentrations at user-specified receptor locations based on user-supplied inputs for emission sources, terrain, and meteorological conditions. AERMOD has been approved for use in various regulatory applications by USEPA, CARB, and SDAPCD. The AERMOD input and output files are included in Attachment 4.2.

The HRA selected the regulatory default option and period averaging in AERMOD, based OEHHA and SDAPCD guidance (OEHHA, 2015; SDAPCD, 2019). Modeling was conducted with urban dispersion coefficients based on the existing land use surrounding the project area. In accordance with SDAPCD guidance, a population of 62,382, which is the population within 3 kilometers of the OTC site, was input for the urban option (SDAPCD, 2019).

3.3.2 Source Characterization

Construction DPM emissions were modeled in AERMOD as AreaPoly sources, which are irregularly shaped polygons. The following three AreaPoly sources were modeled:

- OTC1 represents the construction DPM emissions that would occur on OTC Site 1 for the private development under Alternatives 4 and 5.
- OTC2PRIV represents the construction DPM emissions that would occur on the private development portion of OTC Site 2 under Alternatives 4 and 5.
- OTC2NAVY represents the construction DPM emissions that would occur on the Navy development portion of OTC Site 2 under Alternatives 4 and 5.

The AERMOD sources are depicted in Figure D-1. The sources were modeled with a plume centerline height of 5 meters above ground and an initial vertical dimension of 1.4 meters, which are consistent with a construction modeling study conducted by the South Coast Air Quality Management District to establish its localized significance thresholds (SCAQMD, 2008). Source ground elevations were determined using the USEPA AERMAP model (USEPA, 2018a) and 1-arc-second national elevation dataset elevation data obtained from the United States Geological Survey (2020).

AERMOD modeled construction emissions as occurring from 7:00 a.m. to 7:00 p.m. to align with the City of San Diego noise ordinance. For compatibility with the risk assessment model, Hot Spots Analysis & Reporting Program (HARP), each emission source in AERMOD was modeled with a 1 gram per second “unit” emission rate. The estimated DPM emission rates for each source were input directly in HARP. The DPM emission rates were apportioned to each modeled AERMOD source in proportion to the source’s surface area. Attachment 4.1 of this appendix shows the derivation of DPM emissions by AERMOD source for Alternatives 4 and 5.

3.3.3 Meteorology

The SDAPCD provided an AERMOD-ready meteorological data set for use in the HRA (SDAPCD, personal communication with Cynthia Gould, August 21, 2020). The SDAPCD selected a meteorological station at the San Diego International Airport, approximately 1.0 mile southeast of OTC, as the most representative of conditions near OTC. The data set includes hourly readings of wind speed, wind direction, temperature, and atmospheric stability parameters over a three-year period from January 1, 2010 to December 31, 2012. Figure D-2 shows a wind rose of the meteorological data set. Each “petal” indicates the frequency at which the wind blows from a particular direction, and the colors indicate the range of observed wind speeds. The wind rose shows that the predominant wind direction in the project area is from the north-northwest (i.e., toward the east-southeast). AERMOD calculated average unit DPM concentrations over the entire meteorological data period, which were used for all health risk calculations in HARP.

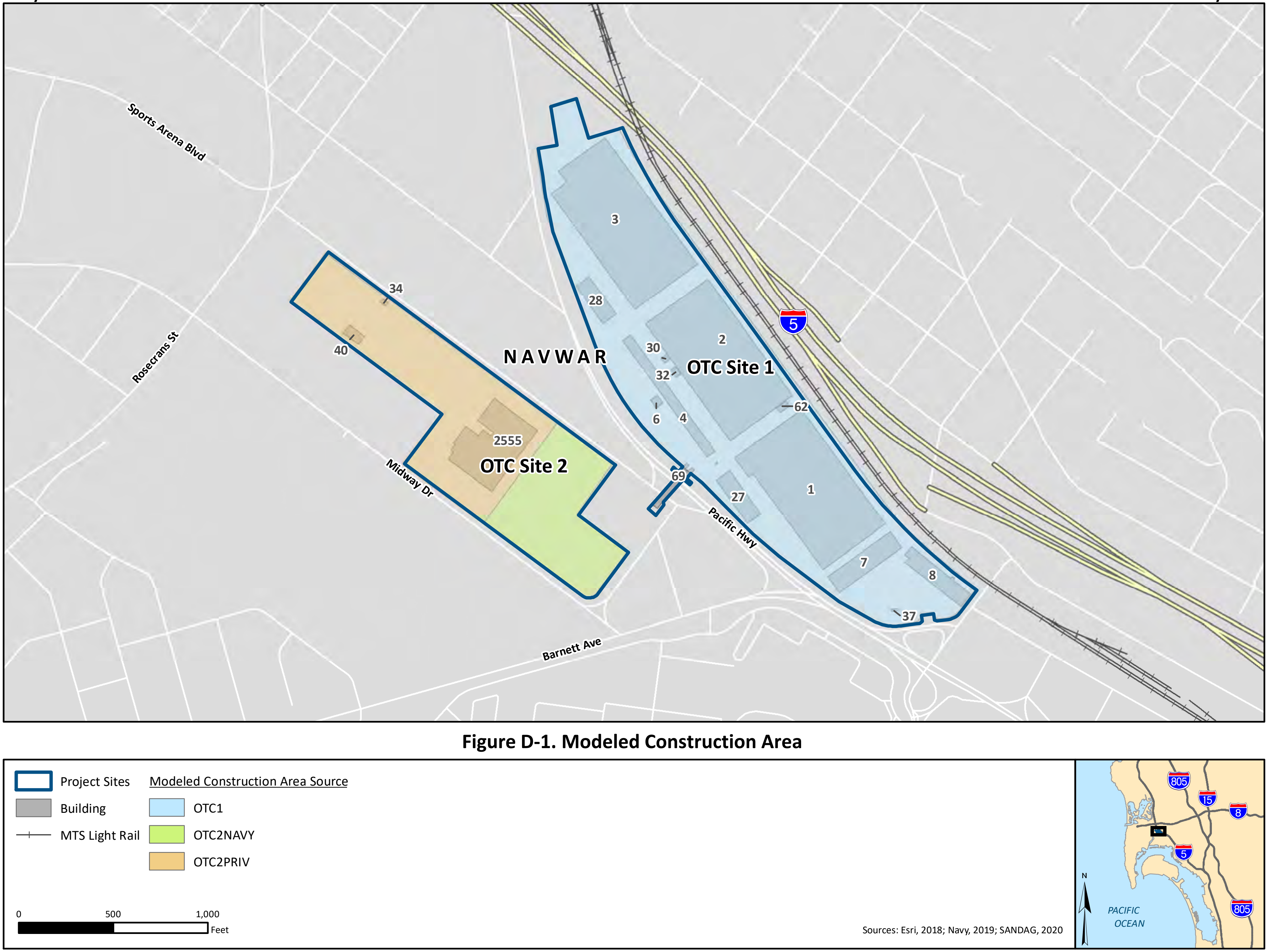


Figure D-1. Modeled Construction Area

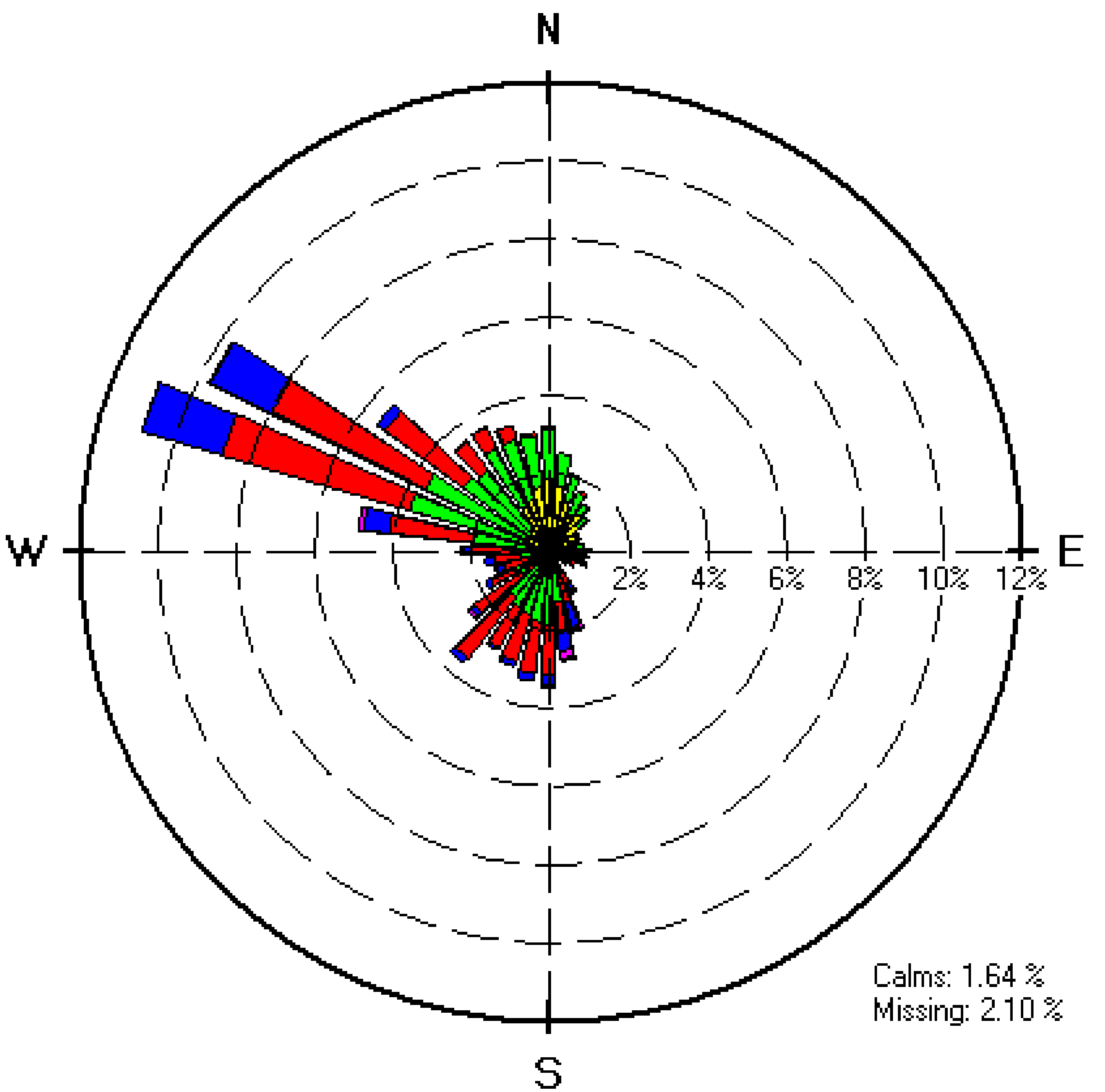
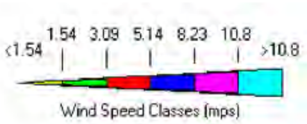


Figure D-2. Wind Rose for SDIA Meteorological Station (2010-2012)



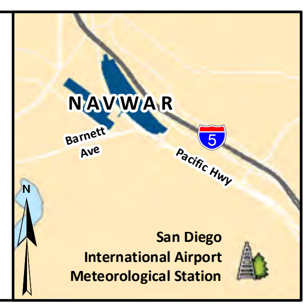
mps = meters per second

Station No. 23188
Lindbergh Field
Year: 2010-2012

Note: Diagram of the frequency of occurrence of each wind direction. Bars indicate direction from which the wind blows.

Met File Type: AERMET SFC
File: Lindbergh_2010_2012_v19191.SFC

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020



3.3.4 Receptors

AERMOD predicted ambient DPM concentrations on a 4-kilometer by 4-kilometer grid of 4,141 modeled receptor points centered on OTC. To capture maximum concentrations with adequate resolution, receptor grid points within 300 meters of OTC were spaced every 25 meters. To determine the geographical extent of impacts, receptor grid points farther than 300 meters from OTC were spaced every 100 meters. Receptor points were also placed along the OTC site boundaries at 25-meter intervals.

Additional receptor points were positioned directly on sensitive nonresidential locations within 0.5 mile (0.8 kilometer) of OTC. These represent locations where persons especially susceptible to adverse health effects from TACs (i.e., children, the elderly, and the ill) would be expected to congregate. In accordance with SDAPCD HRA guidance, sensitive receptors include known locations of schools (grades Kindergarten through 12), day care centers, nursing homes, retirement homes, health clinics, and hospitals. The locations of sensitive receptors were determined with mapping programs and the review of data from applicable organizations, such as the San Diego Unified School District. The sensitive receptors identified for inclusion in this HRA are described in Attachment 4.4.

To apply the appropriate TAC exposure assumptions, the HRA classified each modeled receptor as either residential, worker, or sensitive based on existing land use. Modeled receptors inside OTC boundaries or in unoccupied locations such as roads and parking lots were not included in the determination of maximum health risk impacts. Figure D-3 shows the modeled receptor locations and classifications. For visual clarity, unoccupied modeled receptors (i.e., receptors not classified as residential, worker, or sensitive) are shown as blank areas in the figure.

3.4 Quantification of Health Risks

The HRA performed the health risk calculations using the HARP Air Dispersion Modeling and Risk Tool, version 19121 (CARB, 2019b). The HARP input and output files are provided in Attachment 4.3. HARP quantified the following types of health effects at each modeled receptor:

- Individual cancer risk, which is the additional chance for a person to contract cancer after long-term (multiple year) exposure to project TAC emissions. For this project, HARP estimated the inhalation dose of DPM at each modeled receptor using the AERMOD output. HARP multiplied the DPM dose by the DPM inhalation cancer potency factor to estimate the individual cancer risk at each receptor. The DPM inhalation cancer potency factor is shown in Table D-37.
- Population cancer burden, which is the expected number of additional cancer cases within the project's zone of impact. The zone of impact is defined as the geographical area where the project's 70-year individual lifetime cancer risk is equal to or greater than one chance in a million. For this project, AERMOD and HARP estimated the individual lifetime cancer risk (determined as described in the first bullet) at the centroids of all census blocks in the zone of impact. Cancer burden was determined by multiplying the cancer risk by the census block population for each census block and summing the results for all census blocks in the zone of impact. The population data are from the 2010 U.S. census and are built into HARP. Figure D-4 shows the zone of impact and location of the census block centroids modeled for the cancer burden calculation. The zone of impact corresponds to Alternative 4 because Alternative 4 would produce a larger impact area than Alternative 5. To be conservative, the analysis modeled census block centroids within and slightly beyond the zone of impact boundary.

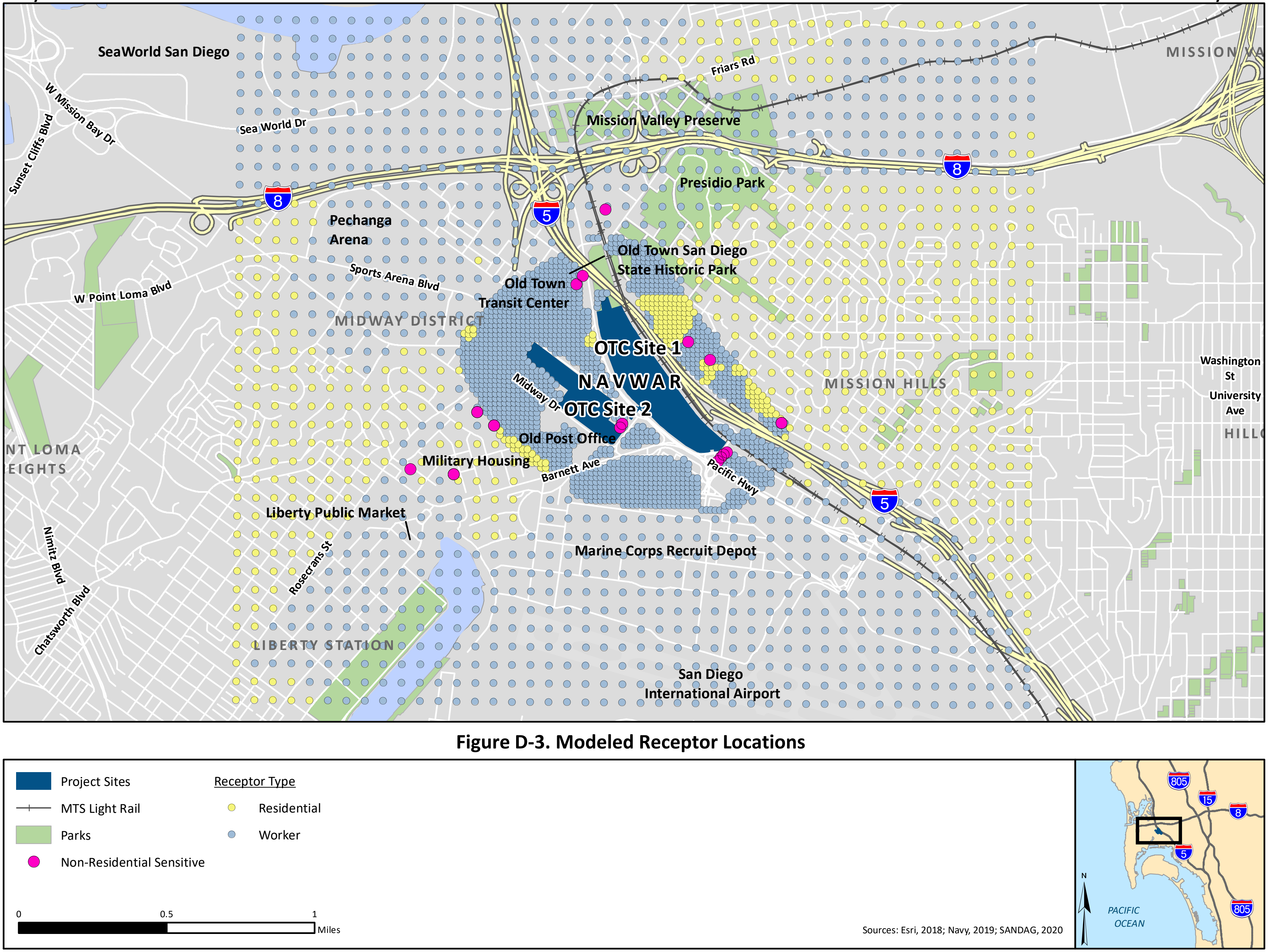


Figure D-3. Modeled Receptor Locations

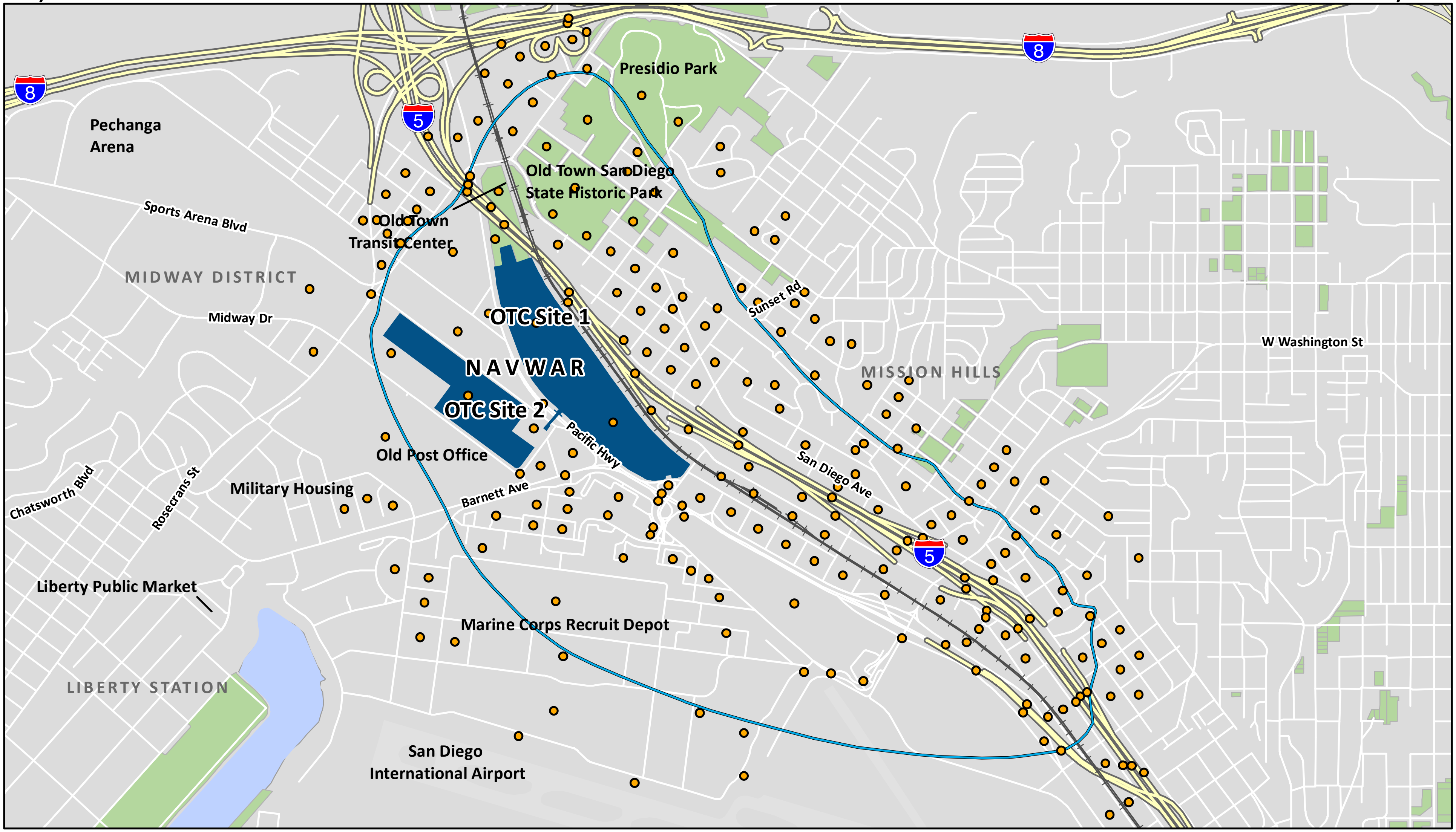
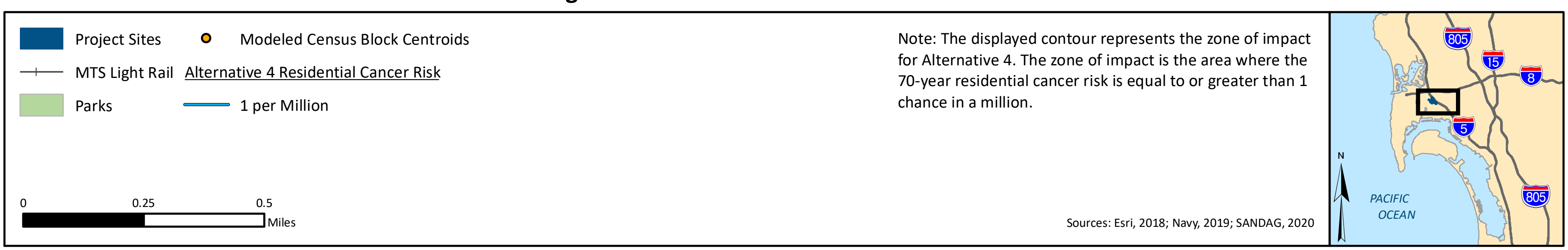


Figure D-4. Modeled Census Block Centroids



- The chronic hazard index, which is a ratio of long-term TAC exposures to TAC reference exposure levels (RELs). A chronic hazard index below 1.0 indicates that adverse non-cancer health effects on a particular human organ system (target organ) from long-term exposure are not expected. For this project, HARP estimated the ambient DPM concentration at each modeled receptor using the AERMOD output. HARP divided the DPM concentration by the DPM inhalation REL to estimate the chronic hazard index at each receptor. The DPM inhalation chronic REL is shown in Table D-37. The respiratory system is the target organ for chronic non-cancer DPM exposure.

Table D-37 DPM Toxicity Factors Used In the HRA

Toxic Air Contaminant	*Inhalation Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$*	*Inhalation Chronic Non-cancer REL $(\mu g/m^3)^{(1)}$*
Diesel Particulate Matter (DPM)	1.1	5

Legend: mg/kg-d = milligrams of dose per kilogram body weight per day; REL = reference exposure level; $\mu g/m^3$ = micrograms per cubic meter.

Note: (1) The respiratory system is the target organ corresponding to the DPM inhalation chronic non-cancer REL.

Source: CARB, 2020e.

CARB and OEHHA have not established 1-hour (acute) or 8-hour non-cancer RELs for DPM; therefore, the HRA did not quantify non-cancer health risks associated with short-term DPM exposures (CARB, 2020e).

3.4.1 Exposure Assumptions

The DPM exposure pathways evaluated in this HRA were selected in accordance with OEHHA guidance. The inhalation pathway must be evaluated for all TACs. OEHHA guidance also requires the evaluation of non-inhalation exposure pathways for specific TACs. However, the DPM exposure pathway is limited to inhalation (CARB, 2020e).

Table D-38 summarizes the primary exposure assumptions used in this HRA to calculate individual cancer risks. The exposure assumptions for residential and occupational receptors were obtained from OEHHA and SDAPCD risk assessment guidance (OEHHA, 2015; SDAPCD, 2019). Consistent with OEHHA guidance, this study assumed exposure periods of 30 years for a residence and 25 years for an off-site worker.

Table D-38 Cancer Risk Exposure Assumptions

Receptor Exposure Type	*Receptor Age*	*Receptor Exposure Duration (years)*	*Project Construction Years(1)*	*Daily Breathing Rate (L/kg-day)*	*Age Sensitivity Factor(2)*	*Fraction of Time at Home(2)*
Residential(3)	3TM < 2 years	2.25	1-2(4)	1,090(5)	10	1
Residential	2 < 16 years	14	3-16	572(6)	3	1
Residential	16 < 30 years	14	17-30	261(6)	1	0.73
Worker	≥ 16 years	25	1-25	230(7)	1	see note(8)

Legend: L/kg-day = liters of air per kilogram body weight per day; 3TM < 2 years = third trimester (before birth) to less than age 2; 2 < 16 years = age 2 to less than age 16; 16 < 30 years = age 16 to less than age 30; ≥ 16 years = age 16 and older.

Notes: (1) The average annual DPM emissions over the specified construction years were modeled in HARP.
(2) Exposure parameters are consistent with OEHHA guidance (OEHHA, 2015).
(3) The 30-year cancer risk equals the sum of the risks associated with the three displayed residential sub-periods.
(4) The average annual DPM emissions from the first two years of project construction were used for the third trimester before birth and the first two years after birth.
(5) Breathing rate is 95th percentile, per SDAPCD guidance (SDAPCD, 2019). The breathing rate during the third trimester was assumed to be 361 L/kg-day (95th percentile).
(6) Breathing rate is 80th percentile, per SDAPCD guidance (SDAPCD, 2019). The corresponding HARP option is “RMP Using the Derived Method”.
(7) Breathing rate is 95th percentile, per OEHHA guidance (OEHHA, 2015).
(8) This HRA conservatively assumed the off-site worker's schedule would coincide with the project's construction schedule, and therefore the worker would be potentially exposed to all of the project's construction DPM emissions. The corresponding HARP setting is a worker adjustment factor of 4.2.

Because the residential exposure assumptions vary by the exposed individual’s age, and because the project construction DPM emissions would vary by year, it was necessary to subdivide the 30-year residential exposure period into the three sub-periods shown in Table D-38. For each sub-period, HARP modeled the annual average DPM emissions corresponding to that sub-period. The HRA then manually summed the cancer risks estimated by HARP for each sub-period to obtain the 30-year residential cancer risk.

The residential exposure assumptions for cancer risk are conservative because they assumed that the exposure of an individual would begin in the third trimester before birth and would continue until age 30 (or, in this case, until project construction ends). This assumption maximized use of the higher breathing rates, age sensitivity factors, and fraction of time at home associated with infants and children (see Table D-38). Because the 30-year residential cancer risk is the most sensitive to TAC exposures in the early years of an individual’s life, this HRA evaluated three possible scenarios for when the individual would enter the third trimester before birth and therefore begin to be exposed to construction DPM emissions. This approach ensured identification of the highest possible cancer risks given the year-to-year variation in construction DPM emissions. The maximum risk from the three scenarios was then selected at each modeled receptor. The three scenarios are:

- **Scenario A: Exposure starts when Navy development construction starts (year 2021).** This scenario captures all 29 years of construction emissions (see Tables D-35 and D-36).
- **Scenario B: Exposure starts when private development construction starts (year 2026).** This scenario captures the final 24 years of construction emissions. Although it excludes Navy development construction (2021-2025), this scenario may produce higher risks at some

locations because it would align the first two years of private development construction emissions with the most sensitive two years (i.e., first two years) of the individual's life.

- **Scenario C: Exposure starts when the second year of private development construction starts (year 2027).** This scenario captures the final 23 years of project construction emissions. Although it excludes Navy development construction and the first year of private development construction, this scenario may produce higher risks at some locations because it would pair the maximum two years of private development construction emissions with the most sensitive two years of the individual's life.

For cancer burden, the HRA used the 30-year residential exposure assumptions shown in Table D-38 as the 70-year exposure assumptions because all project construction emissions would occur within a 30-year period. Therefore, the 30-year and 70-year residential cancer risks associated with project construction would be the same.

The off-site worker exposure assumptions for cancer risk assumed 25 years of exposure to an individual aged 16 and older. This HRA conservatively assumed the off-site worker's daily and weekly schedule would coincide with the project's construction schedule, and therefore the worker would be potentially exposed to all project construction DPM emissions during the first 25 years of construction.

For cancer risk to sensitive receptors, this study used conservative exposure assumptions based on the receptor type. Veterans Village of San Diego, located at 4141 Pacific Highway, has transitional housing with residence durations up to 2 years (Cause IQ, 2020). Therefore, the HRA assumed the individual would begin exposure in the third trimester before birth and continue until age 2 (i.e., 2¼ years of exposure during the most sensitive age range). The Best Start Birth Center, at 3630 Enterprise Street, would expose pregnant mothers and mothers with infants intermittently for relatively brief periods on the order of a year or less. The accumulated exposure duration would be relatively short; therefore, the HRA reported 25-year worker risks for this sensitive receptor because the worker risks would be higher than the risks to the mothers and infants. All other sensitive receptors were modeled with conservative default 30-year residential exposure assumptions.

For the chronic non-cancer hazard index, HARP conservatively modeled the maximum year of construction DPM emissions to estimate maximum long-term DPM concentrations at each modeled receptor. HARP then divided the DPM concentrations by the inhalation chronic REL to produce the hazard index at each receptor.

3.4.2 Health Risk Results

3.4.2.1 Alternative 4

Table D-39 presents the maximum predicted health impacts from construction of Alternative 4. The table includes estimates of individual cancer risk and chronic non-cancer hazard index at the maximally exposed off-site residential, worker, and sensitive receptors. Figure D-5 shows the receptor locations that correspond to the maximum cancer risk results from Alternative 4 construction. Attachment 4.4 lists the estimated health impacts at every modeled sensitive receptor (including residential receptors).

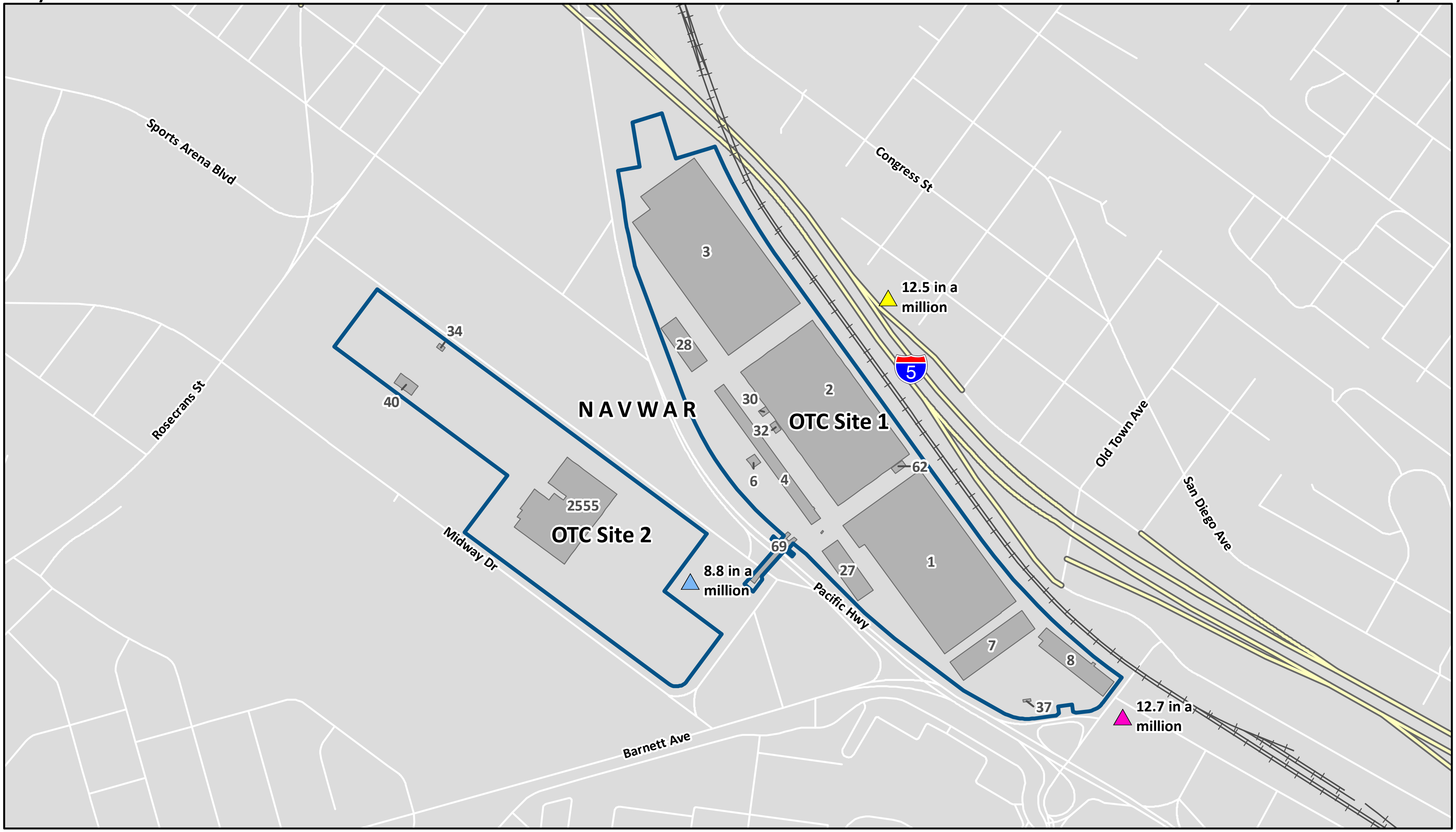


Figure D-5. Location of Maximum Cancer Risk Impacts from Construction Emissions Alternative 4

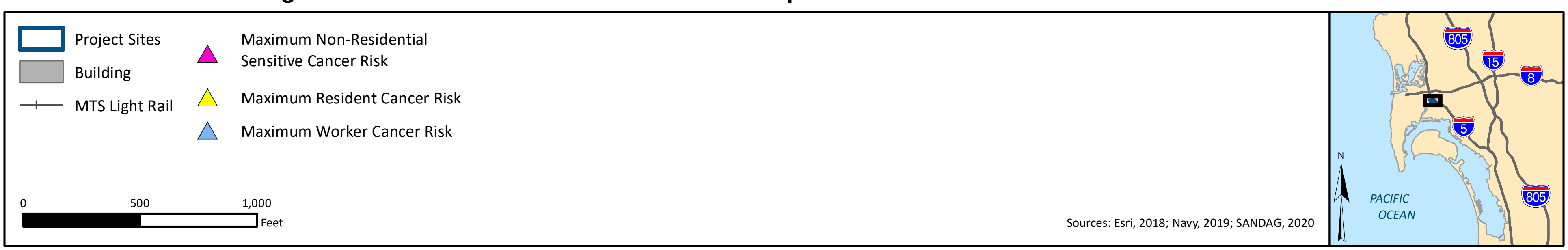


Table D-39 Summary of Health Risk Impacts from Construction of Alternative 4

Receptor Type	*Maximum Cancer Risk (chances in a million)*	*Maximum Chronic Non-cancer Hazard Index*
Residential	12.5	0.004
Worker	8.8	0.03
Sensitive	12.7	0.03
Significance Threshold	**10**	**1.0**
Exceeds Threshold?	**Yes**	**No**

The maximum cancer risk to a residential receptor from Alternative 4 construction would be 12.5 chances in a million. This value would exceed the significance threshold of 10 chances in a million. The maximum residential receptor location is north of Conde Street and just east of I-5. The estimated cancer risk at that location conservatively assumed a 30-year residential exposure starting in the third trimester before birth and continuing to age 30. Figure D-6 shows a plot of 30-year residential risk contours associated with Alternative 4 construction over a project area map.

The maximum cancer risk to an off-site worker from Alternative 4 construction would be 8.8 chances in a million. This value would be less than the significance threshold of 10 chances in a million. The maximum worker receptor location is near the intersection of Pacific Highway and Enterprise Street. The estimated cancer risk at that location conservatively assumed the worker's schedule would match the OTC construction schedule over a 25-year period.

The maximum cancer risk to a sensitive receptor from Alternative 4 construction would be 12.7 chances in a million. This value would exceed the significance threshold of 10 chances in a million. The maximum sensitive receptor location is at the Veteran's Village of San Diego, located at 4141 Pacific Highway. The estimated cancer risk at that location conservatively assumed a 2¼-year residential exposure starting in the third trimester before birth and continuing to age 2. The modeled receptor was conservatively positioned near the edge of the Veteran's Village property closest to OTC.

The maximum chronic non-cancer hazard indices from Alternative 4 construction would be 0.004, 0.03, and 0.03 at a residential, worker, and sensitive receptor, respectively. These hazard indices would be well below the significance threshold of 1.0. Therefore, this HRA predicted that no adverse non-cancer health effects associated with long-term exposure to Alternative 4 construction emissions would occur.

Table D-40 presents the population cancer burden associated with Alternative 4 construction. The estimated cancer burden of 0.013 additional cancer cases within the zone of impact would be well below the significance threshold of 1.0. Attachment 4.5 includes the cancer burden calculations.

Table D-40 Population Cancer Burden from Construction of Alternative 4

Cancer Burden (additional cancer cases)	*Significance Threshold*	*Exceeds Threshold?*
0.013	1.0	No

Figure D-6. Contours of 30-Year Residential Cancer Risk from Alternative 4 Construction

Project Sites

MTS Light Rail

Parks

Alternative 4 Residential Cancer Risk

- 50 per Million
- 20 per Million
- 10 per Million
- 5 per Million
- 2 per Million
- 1 per Million

0 0.25 0.5 Miles

Note: Contours represent cancer risk chances in a million assuming residential exposure from the third trimester before birth to age 30.

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020

3.4.2.2 Alternative 5

Table D-41 presents the maximum predicted health impacts from construction of Alternative 5. The table includes estimates of individual cancer risk and chronic non-cancer hazard index at the maximally exposed off-site residential, worker, and sensitive receptors. Figure D-7 shows the receptor locations that correspond to the maximum cancer risk results from Alternative 5 construction. Attachment 4.4 lists the estimated health impacts at every modeled sensitive receptor (including residential receptors).

Table D-41 Summary of Health Risk Impacts from Construction of Alternative 5

Receptor Type	*Maximum Cancer Risk (chances in a million)*	*Maximum Chronic Non-cancer Hazard Index*
Residential	9.7	0.003
Worker	8.2	0.03
Sensitive	9.9	0.03
Significance Threshold	**10**	**1.0**
Exceeds Threshold?	**No**	**No**

The maximum cancer risk to a residential receptor from Alternative 5 construction would be 9.7 chances in a million. This value would be less than the significance threshold of 10 chances in a million. The maximum residential receptor location is north of Conde Street and just east of I-5. The estimated cancer risk at that location conservatively assumed a 30-year residential exposure starting in the third trimester before birth and continuing to age 30. Figure D-8 shows a plot of 30-year residential risk contours associated with Alternative 5 construction over a project area map.

The maximum cancer risk to an off-site worker from Alternative 5 construction would be 8.2 chances in a million. This value would be less than the significance threshold of 10 chances in a million. The maximum worker receptor location is near the intersection of Pacific Highway and Enterprise Street. The estimated cancer risk at that location conservatively assumed the worker's schedule would match the OTC construction schedule over a 25-year period.

The maximum cancer risk to a sensitive receptor from Alternative 5 construction would be 9.9 chances in a million. This value would be less than the significance threshold of 10 chances in a million. The maximum sensitive receptor location is at the Veteran's Village of San Diego, located at 4141 Pacific Highway. The estimated cancer risk at that location conservatively assumed a 2¼-year residential exposure starting in the third trimester before birth and continuing to age 2. The modeled receptor was conservatively positioned near the edge of the Veteran's Village property closest to OTC.

The maximum chronic non-cancer hazard indices from Alternative 5 construction would be 0.003, 0.03, and 0.03 at a residential, worker, and sensitive receptor, respectively. These hazard indices would be well below the significance threshold of 1.0. Therefore, this HRA predicted that no adverse non-cancer health effects associated with long-term exposure to Alternative 5 construction emissions would occur.

Table D-42 presents the population cancer burden associated with Alternative 5 construction. The estimated cancer burden of 0.011 additional cancer cases within the zone of impact would be well below the significance threshold of 1.0. Attachment 4.5 includes the cancer burden calculations.

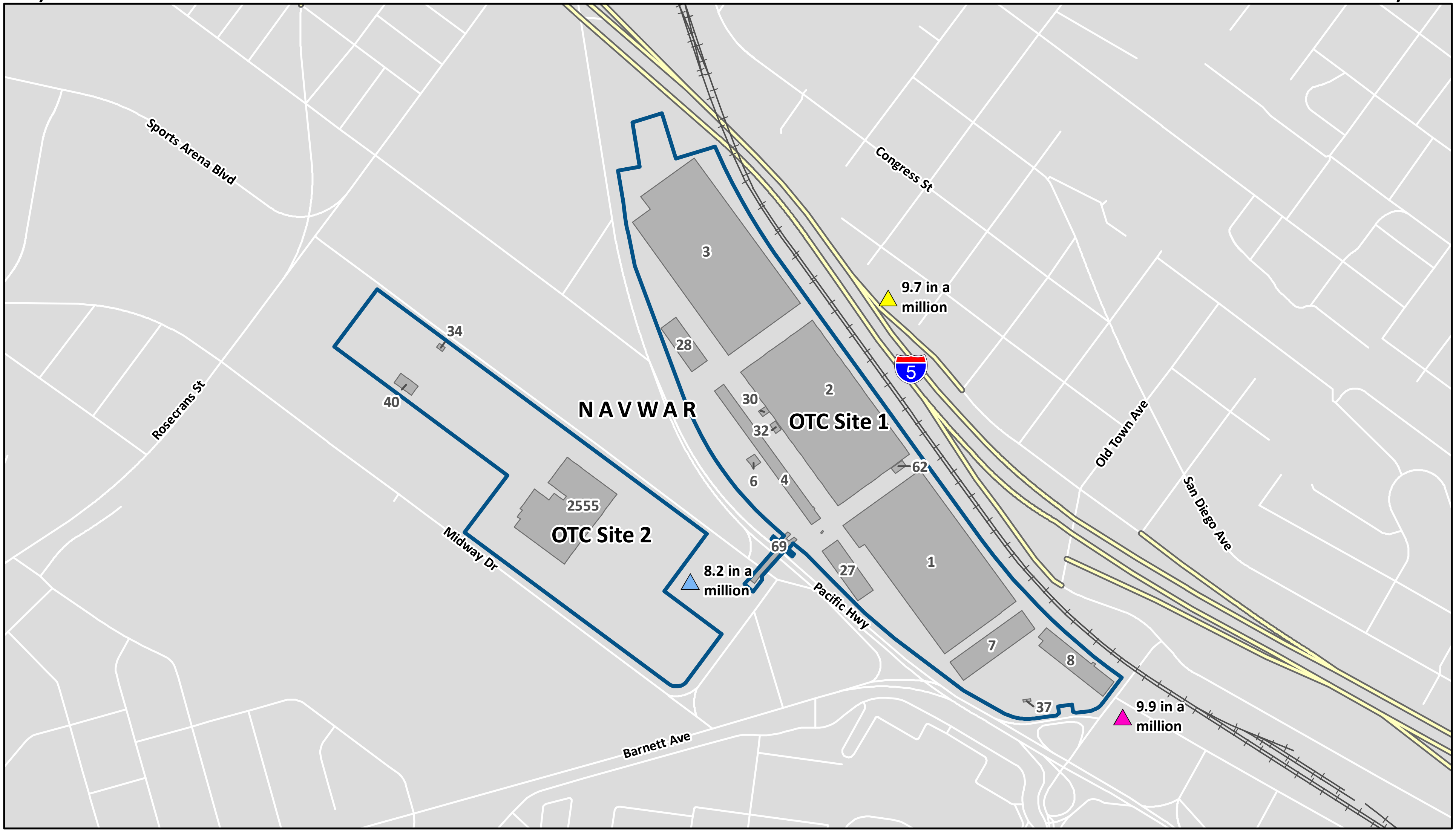
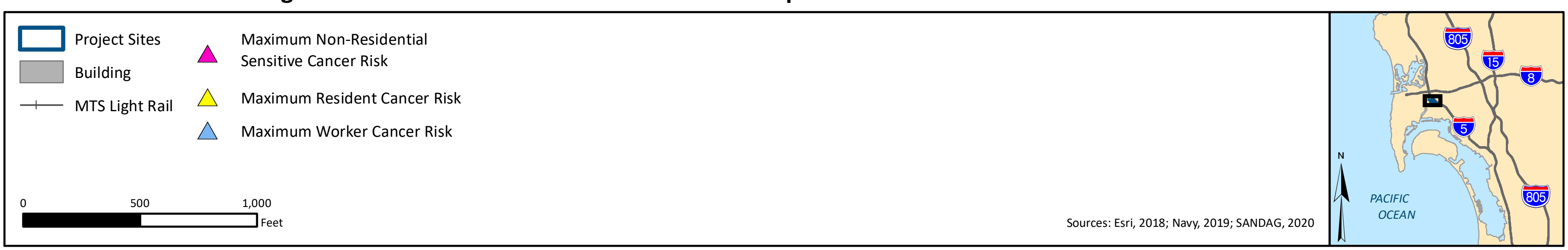


Figure D-7. Location of Maximum Cancer Risk Impacts from Construction Emissions Alternative 5



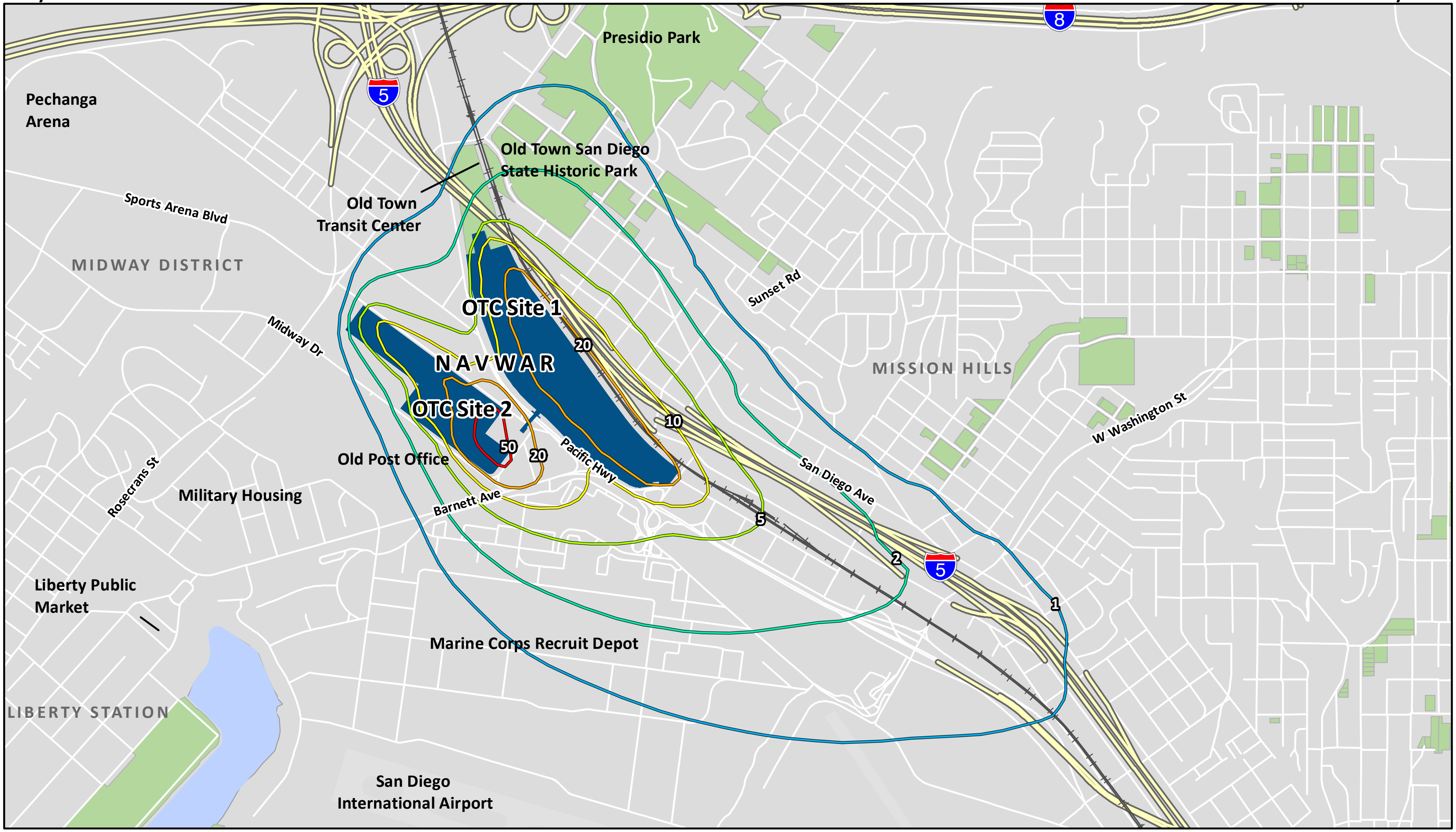


Figure D-8. Contours of 30-Year Residential Cancer Risk from Alternative 5 Construction

Table D-42 Population Cancer Burden from Construction of Alternative 5

Cancer Burden (additional cancer cases)	*Significance Threshold*	*Exceeds Threshold?*
0.011	1.0	No

3.4.2.3 Risks Impacts Associated with Planned Regional Land Use

This HRA evaluated health risks to the existing land uses in the neighborhoods surrounding OTC. EIS Section 3.4 presented a planned regional land use map (See Figure 3.4-5 in Draft EIS Section 3.4, *Land Use*) that shows several areas near OTC that are currently nonresidential but planned for future mixed use. This HRA did not quantify health risks for the planned mixed-use areas because it was unknown at the time of analysis when (if ever) these areas would convert to mixed use during the OTC construction period. In lieu of specific cancer risk estimates for these areas, Figure D-9 shows a plot of the 30-year residential cancer risk from Alternative 4 construction superimposed over the planned regional land use map. The figure shows that the potential future establishment of new residences near OTC during project construction could expose new residents to cancer risks higher than those reported in this HRA for the existing land uses. However, the magnitude of risk would depend on the location of the new residences and how early during OTC project construction they would become occupied.

3.4.3 Uncertainties

This risk analysis included the use of conservative exposure assumptions that likely overestimated actual exposure and risk. For cancer risks, the analysis assumed that residents below the age of 16 years would be exposed for 24 hours per day, 365 days per year at the modeled location. However, young residents usually leave their houses for school, shopping, vacation, etc. Further, it assumed that residents would live in the modeled location for the entire 30-year exposure period, whereas in reality, people move periodically instead of living 30 years at the same location. As a result, reported risks are upper-bound calculations, and actual risks would likely be lower than reported.

Health risk assessments such as the one presented in this appendix are not intended to provide estimates of the absolute health risk or expected incidence of disease in a population, but instead are conducted to allow comparisons of the potential health impacts of different alternatives to each other and to significance criteria. Consistent with agency guidelines and standard approaches to regulatory risk assessment, this risk assessment used health protective (conservative) assumptions to provide a margin of safety with respect to human health. OEHHA has provided a discussion of risk uncertainty, which is reiterated here (OEHHA, 2015):

OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public.

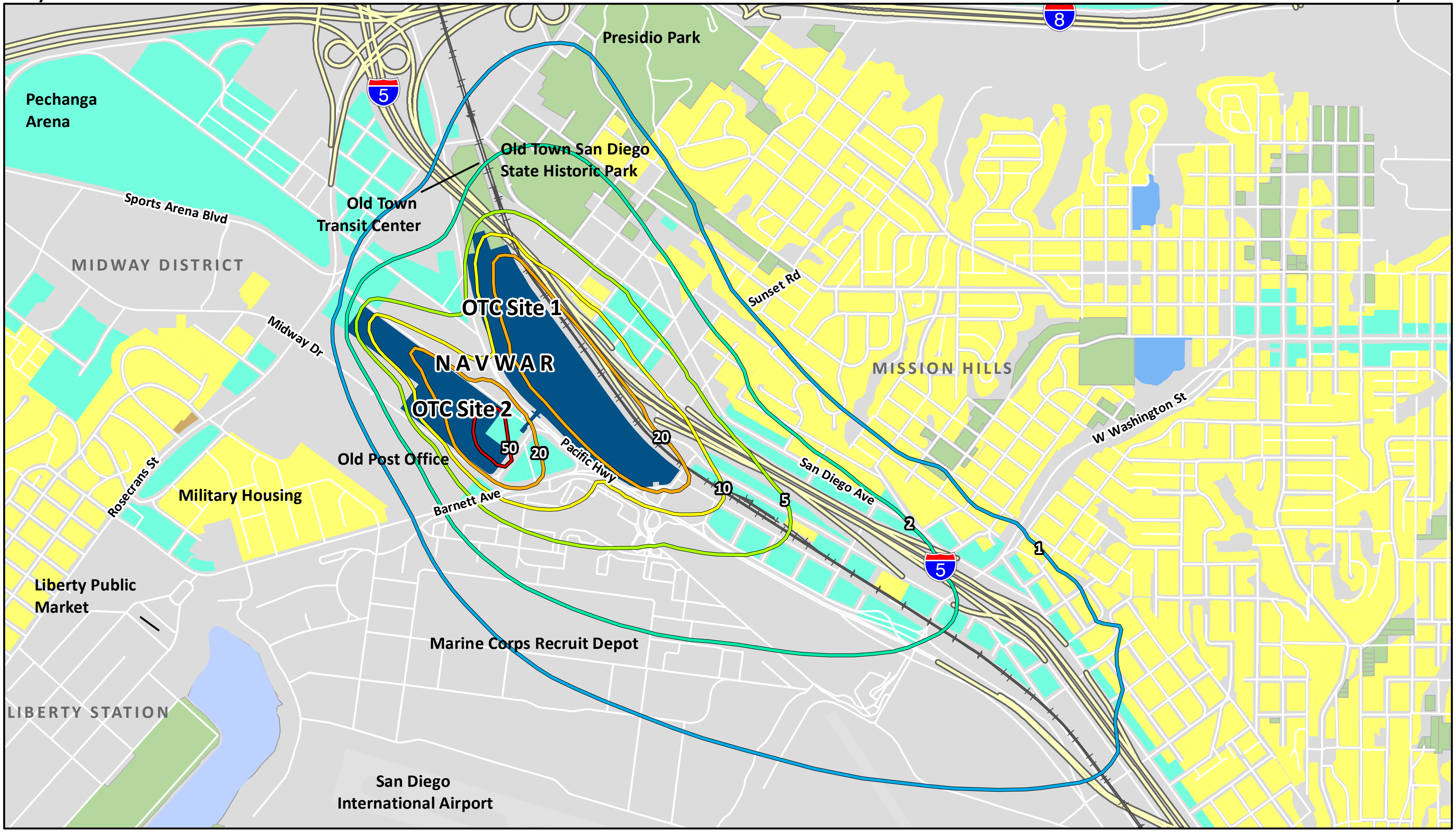


Figure D-9. Contours of 30-Year Residential Cancer Risk from Alternative 4 Construction Projected Over Planned Regional Land Use

Project Sites
MTS Light Rail
Parks

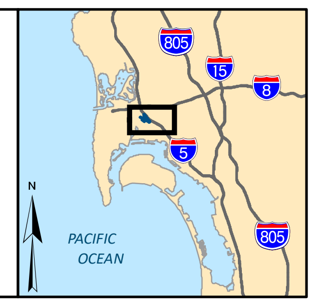
Alternative 4 Residential Cancer Risk
- 50 per Million
- 20 per Million
- 10 per Million
- 5 per Million
- 2 per Million
- 1 per Million

Planned Regional Land Use
- Mixed Use
- Multi-Family Residential
- Residential
- School

0 0.25 0.5 Miles

Notes: 1) Contours represent cancer risk chances in a million assuming residential exposure from the third trimester before birth to age 30.
2) For simplicity, only mixed-use, residential, and school land uses are shown on the planned land use map.

Sources: Esri, 2018; Navy, 2019; SANDAG, 2020



Sources of uncertainty, which may overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates. In addition to uncertainty, there is a natural range or variability in measured parameters defining the exposure scenario. Scientific studies with representative sampling and large enough sample sizes can characterize this variability. In the specific context of a Hot Spots risk assessment, the source of variability with the greatest quantitative impact is variation among the human population in such properties as height, weight, food consumption, breathing rates, and susceptibility to chemical toxicants. OEHHA captures at least some of the variability in exposure by developing data driven distributions of intake rates, where feasible, in the Technical Support Document for Exposure Assessment.

Interactive effects of exposure to more than one carcinogen or toxicant are addressed in the risk assessment with default assumptions of additivity. Cancer risks from all carcinogens addressed in the HRA are added. Similarly, non-cancer hazard quotients for substances impacting the same target organ/system are added to determine the hazard index. Although such effects of multiple chemicals are assumed to be additive by default, several examples of synergism (interactive effects greater than additive) are known. For substances that act synergistically, the HRA could underestimate the risks. Some substances may have antagonistic effects (lessen the toxic effects produced by another substance). For substances that act antagonistically, the HRA could overestimate the risks.

Other sources of uncertainty, which may underestimate or overestimate risk, can be found in exposure estimates where little or no data are available (e.g., soil half-life and dermal penetration of some substances from a soil matrix).

The differences among species and within human populations usually cannot be easily quantified and incorporated into risk assessments. Factors including metabolism, target site sensitivity, diet, immunological responses, and genetics may influence the response to toxicants. The human population is much more diverse both genetically and culturally (e.g., lifestyle, diet) than inbred experimental animals. The intraspecies variability among humans is expected to be much greater than in laboratory animals. In most cases, cancer potency values have been estimated only for the single most affected tumor site. This represents a source of uncertainty in the cancer risk assessment. Adjustment for tumors at multiple sites induced by some carcinogens may result in a higher potency. Some recent assessments of carcinogens include such adjustments. Other uncertainties arise (1) in the assumptions underlying the dose-response model used, and (2) in extrapolating from large experimental doses, where other toxic effects may compromise the assessment of carcinogenic potential, to usually much smaller environmental doses.

When occupational epidemiological data are used to generate a carcinogenic potency or a health protective level for a non-carcinogen, less uncertainty is involved in the extrapolation from workplace exposures to environmental exposures. When using human data, no interspecies extrapolation is necessary, eliminating a significant source of uncertainty. However, children are a subpopulation whose hematological, nervous, endocrine, and immune systems are still developing and who may be more sensitive to the effects of toxicants on their developing systems. The worker population and risk estimates based on occupational epidemiological data are more uncertain for children than adults. Current risk assessment guidelines include procedures designed to address the possibly greater sensitivity of infants and children, but there are only a few compounds for which these effects have actually been measured experimentally. In most cases, the adjustment relies on default assumptions which may either underestimate or overestimate the true risks faced by infants and children exposed to toxic substances or carcinogens.

Risk estimates generated by an HRA should not be interpreted as the expected rates of disease in the exposed population but rather as estimates of potential for disease, based on current knowledge and a number of assumptions.

In the Hot Spots program, cancer risk is often expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 30-year residential period. However, there is uncertainty associated with the cancer risk estimate. An individual's risk of contracting cancer from exposure to facility emissions may be less or more than the risk calculated in the risk assessment. An individual's risk not only depends on the individual's exposure to a specific chemical but also on his or her genetic background, health, diet, lifestyle choices and other environmental and workplace exposures. OEHHA uses health protective exposure assumptions to avoid underestimating risk. For example, the risk estimate for airborne exposure to chemical emissions uses the health protective assumption that the individual has a high breathing rate and exposure began early in life when cancer risk is highest.

An REL is the concentration level at or below which no adverse non-cancer health effects are anticipated for the specified exposure duration. RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. RELs are designed to protect the most sensitive individuals in the population by the inclusion of factors that account for uncertainties as well as individual differences in human susceptibility to chemical exposures. The factors used in the calculation of RELs are meant to err on the side of public health protection in order to avoid underestimation of non-cancer hazards. Exceeding the REL does not automatically indicate an adverse health impact. However, increasing concentrations above the REL value increases the likelihood that the health effect will occur.

Risk assessments under the Hot Spots program are often used to compare one source with another and to prioritize concerns. Consistent approaches to risk assessment are necessary to fulfill this function.

4 Health Effects of Criteria Pollutants for the CEQA Analysis

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive people from illness or discomfort. Pollutants of concern include ozone, nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. These pollutants are discussed in the following paragraphs (USEPA, 2018b; CARB, 2020b; CARB, 2009; San Diego State University, 2020).

Ozone

Ozone is a colorless gas that is not directly emitted into the atmosphere but is formed when VOCs, sometimes referred to as ROG, and NO_x react in the presence of ultraviolet sunlight. The primary sources of VOCs and NO_x, the precursors of ozone, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in ozone formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Because ozone-forming photochemical reactions are not instantaneous and depend on the meteorological conditions, peak ozone levels can occur miles downwind of the sources of precursor emissions. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide

Most NO_2, like ozone, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to ozone formation. The primary sources of NO, the precursor to NO_2, include automobile exhaust and industrial sources. High concentrations of NO_2 can cause breathing difficulties and can produce a brownish-red cast to the atmosphere that reduces visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis, and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 ppm by volume.

Carbon Monoxide

CO is a colorless and odorless gas formed by the incomplete combustion of carbonaceous materials, including fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for most CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. The main sources of SO_2 are power plants and industries that combust coal and oil; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits placed on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter (PM_{10} and $PM_{2.5}$)

PM pollution consists of very small liquid and solid particles, which can include smoke, soot, dust, salts, acids, and metals. PM can be emitted directly or can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs. Inhalable or coarse particulate matter, or PM_{10}, is about one-seventh the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead

Lead in the atmosphere occurs as PM. Key sources of lead include the manufacturing of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decreases in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Sulfates

Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride

Vinyl chloride is a colorless gas with a mild, sweet odor. It has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide

Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles

Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reduced airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

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Attachment 1

Emissions Tables

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Attachment 1.1

Annual Construction Emissions Tables

List of Tables

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Table D-A1.1-1 Annual Construction Emissions by Source Category and Phase, Alternative 1

Source Category [1]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Fugitive Dust	Demolition	2021	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.02	0.00	0.02
Fugitive Dust	Site Preparation	2021	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.04	0.00	0.04
Fugitive Dust	Grading	2021	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.04	0.00	0.04
Off-Road Equipment	Demolition	2021	0.01	0.05	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2021	0.00	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading	2021	0.02	0.07	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Building Construction	2021	0.09	0.40	2.58	0.00	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2022	0.15	0.70	4.59	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2023	0.14	0.69	4.59	0.01	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2024	0.14	0.68	4.62	0.01	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2025	0.08	0.39	2.66	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Paving	2025	0.01	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2025	0.00	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2025	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2025	4.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2021	0.01	0.32	0.08	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Haul Trucks	Grading	2021	0.05	1.84	0.46	0.01	0.12	0.01	0.13	0.03	0.01	0.04
Vendor Trips	Building Construction	2021	0.08	2.54	0.68	0.01	0.16	0.01	0.17	0.05	0.01	0.05
Vendor Trips	Building Construction	2022	0.13	4.26	1.14	0.01	0.29	0.01	0.30	0.08	0.01	0.09
Vendor Trips	Building Construction	2023	0.10	3.35	1.04	0.01	0.29	0.00	0.30	0.08	0.00	0.09
Vendor Trips	Building Construction	2024	0.09	3.33	1.01	0.01	0.29	0.00	0.30	0.08	0.00	0.09
Vendor Trips	Building Construction	2025	0.05	1.89	0.57	0.01	0.17	0.00	0.17	0.05	0.00	0.05
Worker Trips	Demolition	2021	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Site Preparation	2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading	2021	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Building Construction	2021	0.17	0.12	1.21	0.00	0.39	0.00	0.39	0.10	0.00	0.11
Worker Trips	Building Construction	2022	0.28	0.19	2.00	0.01	0.69	0.00	0.69	0.18	0.00	0.19
Worker Trips	Building Construction	2023	0.27	0.18	1.85	0.01	0.69	0.00	0.69	0.18	0.00	0.19
Worker Trips	Building Construction	2024	0.26	0.16	1.74	0.01	0.70	0.00	0.70	0.18	0.00	0.19
Worker Trips	Building Construction	2025	0.14	0.09	0.94	0.00	0.40	0.00	0.40	0.11	0.00	0.11
Worker Trips	Paving	2025	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2025	0.01	0.01	0.07	0.00	0.03	0.00	0.03	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [1] Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-2 Annual Construction Emissions by Source Category and Phase, Alternatives 2 through 5, Navy Development

Source Category [1]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Fugitive Dust	Demolition	2021	0.00	0.00	0.00	0.00	0.09	0.00	0.09	0.01	0.00	0.01
Fugitive Dust	Site Preparation	2021	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2021	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.02	0.00	0.02
Off-Road Equipment	Demolition	2021	0.00	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2021	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2021	0.01	0.04	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2021	0.01	0.04	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Building Construction	2021	0.25	1.16	7.46	0.01	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2022	0.29	1.40	9.18	0.01	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2023	0.28	1.38	9.17	0.01	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2024	0.27	1.37	9.24	0.01	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2025	0.22	1.14	7.79	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Paving	2025	0.00	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2025	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2025	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2021	0.01	0.24	0.06	0.00	0.02	0.00	0.02	0.00	0.00	0.01
Haul Trucks	Grading and Utilities	2021	0.03	0.98	0.24	0.00	0.06	0.00	0.07	0.02	0.00	0.02
Vendor Trips	Foundation Drilling	2021	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor Trips	Building Construction	2021	0.02	0.59	0.16	0.00	0.04	0.00	0.04	0.01	0.00	0.01
Vendor Trips	Building Construction	2022	0.02	0.68	0.18	0.00	0.05	0.00	0.05	0.01	0.00	0.01
Vendor Trips	Building Construction	2023	0.02	0.54	0.17	0.00	0.05	0.00	0.05	0.01	0.00	0.01
Vendor Trips	Building Construction	2024	0.02	0.53	0.16	0.00	0.05	0.00	0.05	0.01	0.00	0.01
Vendor Trips	Building Construction	2025	0.01	0.44	0.13	0.00	0.04	0.00	0.04	0.01	0.00	0.01
Worker Trips	Demolition	2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Site Preparation	2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2021	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2021	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Building Construction	2021	0.82	0.58	5.89	0.02	1.89	0.01	1.90	0.50	0.01	0.51
Worker Trips	Building Construction	2022	0.96	0.66	6.74	0.02	2.33	0.02	2.35	0.62	0.01	0.63
Worker Trips	Building Construction	2023	0.91	0.60	6.25	0.02	2.33	0.02	2.34	0.62	0.01	0.63
Worker Trips	Building Construction	2024	0.87	0.55	5.88	0.02	2.35	0.02	2.36	0.62	0.01	0.64
Worker Trips	Building Construction	2025	0.70	0.43	4.63	0.02	1.98	0.01	1.99	0.53	0.01	0.54
Worker Trips	Paving	2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2025	0.01	0.01	0.08	0.00	0.04	0.00	0.04	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [1]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-3 Annual Construction Emissions by Source Category and Phase, Alternative 2, Private Development

Source Category [1][2]	Construction Phase	Year	VOC (ton/yr)	NO_x (ton/yr)	CO (ton/yr)	SO_x (ton/yr)	Fugitive PM_{10} (ton/yr)	Exhaust PM_{10} (ton/yr)	PM_{10} (ton/yr)	Fugitive $PM_{2.5}$ (ton/yr)	Exhaust $PM_{2.5}$ (ton/yr)	$PM_{2.5}$ (ton/yr)
Fugitive Dust	Demolition	2026	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.11	0.00	0.11
Fugitive Dust	Site Preparation	2026	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.09	0.00	0.09
Fugitive Dust	Grading and Utilities	2026	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2030	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2035	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.05	0.00	0.05
Off-Road Equipment	Demolition	2026	0.02	0.07	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2026	0.01	0.04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2026	0.02	0.08	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2030	0.01	0.06	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2035	0.04	0.17	1.69	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2026	0.03	0.13	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2030	0.02	0.10	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2035	0.05	0.23	1.94	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2036	0.01	0.05	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Building Construction	2026	0.19	0.95	6.50	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2027	0.39	2.01	13.79	0.02	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2028	0.39	2.01	13.74	0.02	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2029	0.34	1.72	11.78	0.02	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2030	0.32	1.74	12.59	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2031	0.35	1.90	13.75	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2032	0.35	1.91	13.81	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2033	0.35	1.89	13.70	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2034	0.31	1.67	12.12	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2035	0.26	1.43	10.53	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2036	0.34	1.87	13.80	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2037	0.34	1.86	13.74	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2038	0.34	1.86	13.74	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2039	0.34	1.86	13.69	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2040	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2041	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2042	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2043	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2044	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2045	0.34	1.84	13.69	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2046	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2047	0.34	1.85	13.74	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2048	0.34	1.85	13.79	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2049	0.23	1.27	9.42	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Paving	2029	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2034	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2049	0.01	0.02	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2029	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2034	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2049	0.00	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2029	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2034	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2049	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2028	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2029	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2030	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2031	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-3 Annual Construction Emissions by Source Category and Phase, Alternative 2, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Architectural Coating	Architectural Coating	2032	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2033	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2034	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2035	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2036	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2037	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2038	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2039	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2040	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2041	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2042	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2043	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2044	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2045	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2046	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2047	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2048	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2049	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2026	0.04	1.15	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2026	0.04	1.16	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2030	0.03	0.86	0.39	0.00	0.10	0.00	0.11	0.03	0.00	0.03
Haul Trucks	Grading and Utilities	2035	0.08	2.22	1.11	0.01	0.29	0.00	0.29	0.08	0.00	0.08
Vendor Trips	Foundation Drilling	2026	0.00	0.08	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2030	0.00	0.06	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2035	0.00	0.14	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2036	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor Trips	Building Construction	2026	0.04	1.50	0.46	0.01	0.14	0.00	0.14	0.04	0.00	0.04
Vendor Trips	Building Construction	2027	0.09	3.15	0.95	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2028	0.08	3.10	0.94	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2029	0.07	2.63	0.80	0.01	0.25	0.00	0.25	0.07	0.00	0.07
Vendor Trips	Building Construction	2030	0.08	2.78	0.86	0.01	0.27	0.00	0.27	0.08	0.00	0.08
Vendor Trips	Building Construction	2031	0.08	3.01	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2032	0.08	3.00	0.94	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2033	0.08	2.95	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2034	0.07	2.60	0.82	0.01	0.26	0.00	0.26	0.07	0.00	0.08
Vendor Trips	Building Construction	2035	0.06	2.25	0.71	0.01	0.22	0.00	0.22	0.06	0.00	0.07
Vendor Trips	Building Construction	2036	0.08	2.94	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2037	0.08	2.93	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2038	0.08	2.93	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2039	0.08	2.92	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2040	0.08	2.88	0.92	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2041	0.08	2.88	0.92	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2042	0.08	2.88	0.92	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2043	0.08	2.88	0.92	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2044	0.08	2.88	0.92	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2045	0.08	2.85	0.90	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2046	0.08	2.86	0.90	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2047	0.08	2.86	0.90	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2048	0.08	2.87	0.91	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2049	0.05	1.96	0.62	0.01	0.20	0.00	0.20	0.06	0.00	0.06
Worker Trips	Demolition	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-3 Annual Construction Emissions by Source Category and Phase, Alternative 2, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Worker Trips	Site Preparation	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2030	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2035	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2026	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2030	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2035	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker Trips	Foundation Drilling	2036	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Building Construction	2026	0.16	0.09	1.03	0.00	0.47	0.00	0.47	0.12	0.00	0.13
Worker Trips	Building Construction	2027	0.32	0.19	2.05	0.01	0.99	0.01	1.00	0.26	0.01	0.27
Worker Trips	Building Construction	2028	0.30	0.17	1.94	0.01	0.99	0.01	0.99	0.26	0.01	0.27
Worker Trips	Building Construction	2029	0.25	0.14	1.57	0.01	0.85	0.00	0.85	0.22	0.00	0.23
Worker Trips	Building Construction	2030	0.25	0.14	1.60	0.01	0.91	0.00	0.91	0.24	0.00	0.24
Worker Trips	Building Construction	2031	0.25	0.14	1.65	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2032	0.24	0.14	1.58	0.01	0.99	0.00	1.00	0.26	0.00	0.27
Worker Trips	Building Construction	2033	0.22	0.13	1.50	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2034	0.18	0.11	1.27	0.01	0.87	0.00	0.88	0.23	0.00	0.23
Worker Trips	Building Construction	2035	0.15	0.09	1.06	0.00	0.76	0.00	0.76	0.20	0.00	0.20
Worker Trips	Building Construction	2036	0.20	0.12	1.39	0.01	0.99	0.00	1.00	0.26	0.00	0.27
Worker Trips	Building Construction	2037	0.20	0.12	1.38	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2038	0.20	0.12	1.38	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2039	0.20	0.12	1.38	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2040	0.16	0.10	1.20	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2041	0.16	0.10	1.20	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2042	0.16	0.10	1.20	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2043	0.16	0.10	1.20	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2044	0.16	0.10	1.20	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2045	0.14	0.10	1.13	0.01	0.99	0.00	0.99	0.26	0.00	0.26
Worker Trips	Building Construction	2046	0.14	0.10	1.14	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2047	0.14	0.10	1.14	0.01	0.99	0.00	0.99	0.26	0.00	0.27
Worker Trips	Building Construction	2048	0.14	0.10	1.14	0.01	0.99	0.00	1.00	0.26	0.00	0.27
Worker Trips	Building Construction	2049	0.10	0.07	0.78	0.00	0.68	0.00	0.68	0.18	0.00	0.18
Worker Trips	Paving	2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2029	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Architectural Coating	2034	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Architectural Coating	2049	0.00	0.00	0.04	0.00	0.03	0.00	0.03	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : [1]Annual VOC evaporative emissions from architectural coating were manually distributed evenly from 2028-2049.

[2]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-4 Annual Construction Emissions by Source Category and Phase, Alternative 3, Private Development

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Fugitive Dust	Demolition	2026	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.11	0.00	0.11
Fugitive Dust	Site Preparation	2026	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.09	0.00	0.09
Fugitive Dust	Grading and Utilities	2026	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2030	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2035	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.05	0.00	0.05
Off-Road Equipment	Demolition	2026	0.02	0.07	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2026	0.01	0.04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2026	0.02	0.08	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2030	0.01	0.06	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2035	0.04	0.17	1.69	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2026	0.02	0.11	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2030	0.02	0.08	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2035	0.05	0.23	1.94	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2036	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Building Construction	2026	0.12	0.63	4.33	0.01	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2027	0.26	1.34	9.20	0.01	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2028	0.26	1.34	9.16	0.01	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2029	0.22	1.15	7.86	0.01	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2030	0.21	1.16	8.40	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2031	0.23	1.27	9.17	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2032	0.23	1.27	9.20	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2033	0.23	1.26	9.13	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2034	0.21	1.12	8.08	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2035	0.17	0.95	7.02	0.01	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2036	0.23	1.25	9.20	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2037	0.23	1.24	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2038	0.23	1.24	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2039	0.22	1.24	9.13	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2040	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2041	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2042	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2043	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2044	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2045	0.22	1.23	9.12	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2046	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2047	0.22	1.23	9.16	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2048	0.23	1.24	9.19	0.02	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Building Construction	2049	0.15	0.84	6.28	0.01	0.00	0.02	0.02	0.00	0.02	0.02
Off-Road Equipment	Paving	2029	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2034	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2049	0.01	0.02	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2029	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2034	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2049	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2029	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2034	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2049	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2028	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2029	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2030	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2031	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-4 Annual Construction Emissions by Source Category and Phase, Alternative 3, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Architectural Coating	Architectural Coating	2032	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2033	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2034	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2035	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2036	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2037	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2038	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2039	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2040	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2041	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2042	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2043	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2044	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2045	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2046	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2047	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2048	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2049	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2026	0.04	1.15	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2026	0.04	1.16	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2030	0.03	0.86	0.39	0.00	0.10	0.00	0.11	0.03	0.00	0.03
Haul Trucks	Grading and Utilities	2035	0.08	2.22	1.11	0.01	0.29	0.00	0.29	0.08	0.00	0.08
Vendor Trips	Foundation Drilling	2026	0.00	0.07	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2030	0.00	0.05	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2035	0.00	0.14	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2036	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor Trips	Building Construction	2026	0.03	1.08	0.33	0.00	0.10	0.00	0.10	0.03	0.00	0.03
Vendor Trips	Building Construction	2027	0.06	2.26	0.69	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2028	0.06	2.23	0.68	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2029	0.05	1.89	0.58	0.01	0.18	0.00	0.18	0.05	0.00	0.05
Vendor Trips	Building Construction	2030	0.05	2.00	0.62	0.01	0.19	0.00	0.19	0.06	0.00	0.06
Vendor Trips	Building Construction	2031	0.06	2.17	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2032	0.06	2.16	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2033	0.06	2.13	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2034	0.05	1.87	0.59	0.01	0.18	0.00	0.19	0.05	0.00	0.06
Vendor Trips	Building Construction	2035	0.04	1.62	0.51	0.01	0.16	0.00	0.16	0.05	0.00	0.05
Vendor Trips	Building Construction	2036	0.06	2.12	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2037	0.06	2.11	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2038	0.06	2.11	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2039	0.06	2.10	0.67	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2040	0.06	2.07	0.66	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2041	0.06	2.07	0.66	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2042	0.06	2.07	0.66	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2043	0.06	2.07	0.66	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2044	0.06	2.07	0.66	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2045	0.06	2.05	0.65	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2046	0.06	2.06	0.65	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2047	0.06	2.06	0.65	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2048	0.06	2.07	0.65	0.01	0.21	0.00	0.21	0.06	0.00	0.06
Vendor Trips	Building Construction	2049	0.04	1.41	0.45	0.01	0.14	0.00	0.14	0.04	0.00	0.04
Worker Trips	Demolition	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-4 Annual Construction Emissions by Source Category and Phase, Alternative 3, Private Development, Continued

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Worker Trips	Site Preparation	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2030	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2035	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2026	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2030	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2035	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker Trips	Foundation Drilling	2036	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Building Construction	2026	0.10	0.06	0.68	0.00	0.31	0.00	0.31	0.08	0.00	0.08
Worker Trips	Building Construction	2027	0.21	0.12	1.36	0.01	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2028	0.20	0.12	1.29	0.00	0.65	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2029	0.16	0.09	1.04	0.00	0.56	0.00	0.56	0.15	0.00	0.15
Worker Trips	Building Construction	2030	0.16	0.09	1.06	0.00	0.60	0.00	0.60	0.16	0.00	0.16
Worker Trips	Building Construction	2031	0.17	0.10	1.10	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2032	0.16	0.09	1.05	0.00	0.66	0.00	0.66	0.18	0.00	0.18
Worker Trips	Building Construction	2033	0.15	0.09	1.00	0.00	0.65	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2034	0.12	0.07	0.84	0.00	0.58	0.00	0.58	0.15	0.00	0.16
Worker Trips	Building Construction	2035	0.10	0.06	0.70	0.00	0.50	0.00	0.51	0.13	0.00	0.14
Worker Trips	Building Construction	2036	0.13	0.08	0.92	0.00	0.66	0.00	0.66	0.18	0.00	0.18
Worker Trips	Building Construction	2037	0.13	0.08	0.92	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2038	0.13	0.08	0.92	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2039	0.13	0.08	0.91	0.00	0.65	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2040	0.10	0.07	0.80	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2041	0.10	0.07	0.80	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2042	0.10	0.07	0.80	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2043	0.10	0.07	0.80	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2044	0.10	0.07	0.80	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2045	0.09	0.06	0.75	0.00	0.65	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2046	0.09	0.07	0.75	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2047	0.09	0.07	0.75	0.00	0.66	0.00	0.66	0.17	0.00	0.18
Worker Trips	Building Construction	2048	0.09	0.07	0.76	0.00	0.66	0.00	0.66	0.18	0.00	0.18
Worker Trips	Building Construction	2049	0.06	0.04	0.52	0.00	0.45	0.00	0.45	0.12	0.00	0.12
Worker Trips	Paving	2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2029	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Architectural Coating	2034	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Architectural Coating	2049	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1) Annual VOC evaporative emissions from architectural coating were manually distributed evenly from 2028-2049.

(2) Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-5 Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Fugitive Dust	Demolition	2026	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.11	0.00	0.11
Fugitive Dust	Site Preparation	2026	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.09	0.00	0.09
Fugitive Dust	Grading and Utilities	2026	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2030	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2035	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.05	0.00	0.05
Off-Road Equipment	Demolition	2026	0.02	0.07	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2026	0.01	0.04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2026	0.02	0.08	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2030	0.01	0.06	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2035	0.04	0.17	1.69	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2026	0.03	0.13	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2027	0.01	0.05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2030	0.03	0.15	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2035	0.05	0.23	1.94	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2036	0.04	0.18	1.50	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Building Construction	2026	0.28	1.42	9.75	0.01	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2027	0.59	3.02	20.69	0.03	0.00	0.09	0.09	0.00	0.09	0.09
Off-Road Equipment	Building Construction	2028	0.59	3.01	20.61	0.03	0.00	0.09	0.09	0.00	0.09	0.09
Off-Road Equipment	Building Construction	2029	0.51	2.58	17.68	0.03	0.00	0.08	0.08	0.00	0.08	0.08
Off-Road Equipment	Building Construction	2030	0.48	2.61	18.89	0.03	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2031	0.53	2.85	20.63	0.04	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2032	0.53	2.86	20.71	0.04	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2033	0.52	2.84	20.55	0.04	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2034	0.46	2.51	18.18	0.03	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2035	0.39	2.14	15.80	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2036	0.51	2.81	20.69	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2037	0.51	2.79	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2038	0.51	2.79	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2039	0.51	2.78	20.53	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2040	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2041	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2042	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2043	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2044	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2045	0.50	2.76	20.53	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2046	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2047	0.51	2.77	20.61	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2048	0.51	2.78	20.69	0.04	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2049	0.35	1.90	14.13	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Paving	2029	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2034	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2049	0.01	0.02	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2029	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2034	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2049	0.01	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2029	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2034	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2049	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2028	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2029	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2030	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-5 Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development, Continued

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Architectural Coating	Architectural Coating	2031	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2032	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2033	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2034	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2035	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2036	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2037	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2038	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2039	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2040	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2041	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2042	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2043	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2044	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2045	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2046	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2047	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2048	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2049	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2026	0.04	1.15	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2026	0.03	1.09	0.45	0.01	0.12	0.00	0.13	0.03	0.00	0.04
Haul Trucks	Grading and Utilities	2030	0.03	0.80	0.37	0.00	0.10	0.00	0.10	0.03	0.00	0.03
Haul Trucks	Grading and Utilities	2035	0.07	2.09	1.04	0.01	0.27	0.00	0.27	0.07	0.00	0.08
Vendor Trips	Foundation Drilling	2026	0.00	0.09	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2027	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2030	0.00	0.09	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2035	0.00	0.14	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2036	0.00	0.11	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Building Construction	2026	0.06	2.16	0.66	0.01	0.20	0.00	0.20	0.06	0.00	0.06
Vendor Trips	Building Construction	2027	0.12	4.53	1.37	0.02	0.42	0.01	0.42	0.12	0.00	0.13
Vendor Trips	Building Construction	2028	0.12	4.46	1.36	0.02	0.42	0.01	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2029	0.10	3.78	1.16	0.01	0.36	0.00	0.36	0.10	0.00	0.11
Vendor Trips	Building Construction	2030	0.11	4.01	1.24	0.01	0.38	0.00	0.39	0.11	0.00	0.11
Vendor Trips	Building Construction	2031	0.12	4.33	1.34	0.02	0.42	0.00	0.42	0.12	0.00	0.13
Vendor Trips	Building Construction	2032	0.12	4.32	1.35	0.02	0.42	0.00	0.42	0.12	0.00	0.13
Vendor Trips	Building Construction	2033	0.12	4.25	1.34	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2034	0.10	3.74	1.18	0.01	0.37	0.00	0.37	0.11	0.00	0.11
Vendor Trips	Building Construction	2035	0.09	3.23	1.02	0.01	0.32	0.00	0.32	0.09	0.00	0.10
Vendor Trips	Building Construction	2036	0.11	4.23	1.34	0.02	0.42	0.00	0.42	0.12	0.00	0.13
Vendor Trips	Building Construction	2037	0.11	4.22	1.34	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2038	0.11	4.22	1.34	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2039	0.11	4.20	1.33	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2040	0.11	4.14	1.32	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2041	0.11	4.14	1.32	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2042	0.11	4.14	1.32	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2043	0.11	4.14	1.32	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2044	0.11	4.14	1.32	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2045	0.11	4.10	1.30	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2046	0.11	4.12	1.30	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2047	0.11	4.12	1.30	0.02	0.42	0.00	0.42	0.12	0.00	0.12
Vendor Trips	Building Construction	2048	0.11	4.13	1.31	0.02	0.42	0.00	0.42	0.12	0.00	0.13

Table D-A1.1-5 Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Vendor Trips	Building Construction	2049	0.08	2.82	0.89	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Worker Trips	Demolition	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Site Preparation	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2030	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2035	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2026	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2027	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2030	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2035	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker Trips	Foundation Drilling	2036	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.00	0.00
Worker Trips	Building Construction	2026	0.56	0.33	3.60	0.01	1.64	0.01	1.65	0.44	0.01	0.45
Worker Trips	Building Construction	2027	1.13	0.66	7.21	0.03	3.48	0.02	3.50	0.92	0.02	0.94
Worker Trips	Building Construction	2028	1.07	0.61	6.81	0.03	3.47	0.02	3.49	0.92	0.02	0.94
Worker Trips	Building Construction	2029	0.87	0.49	5.53	0.02	2.97	0.02	2.99	0.79	0.01	0.80
Worker Trips	Building Construction	2030	0.87	0.50	5.62	0.02	3.19	0.02	3.20	0.85	0.01	0.86
Worker Trips	Building Construction	2031	0.88	0.51	5.81	0.02	3.48	0.02	3.50	0.92	0.01	0.94
Worker Trips	Building Construction	2032	0.83	0.48	5.55	0.02	3.49	0.01	3.51	0.93	0.01	0.94
Worker Trips	Building Construction	2033	0.77	0.45	5.27	0.02	3.47	0.01	3.48	0.92	0.01	0.93
Worker Trips	Building Construction	2034	0.64	0.38	4.46	0.02	3.07	0.01	3.08	0.82	0.01	0.83
Worker Trips	Building Construction	2035	0.22	0.13	1.56	0.01	1.12	0.00	1.12	0.30	0.00	0.30
Worker Trips	Building Construction	2036	0.29	0.18	2.04	0.01	1.46	0.00	1.47	0.39	0.00	0.39
Worker Trips	Building Construction	2037	0.29	0.17	2.03	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2038	0.29	0.17	2.03	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2039	0.29	0.17	2.03	0.01	1.45	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2040	0.23	0.15	1.77	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2041	0.23	0.15	1.77	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2042	0.23	0.15	1.77	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2043	0.23	0.15	1.77	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2044	0.23	0.15	1.77	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2045	0.20	0.14	1.66	0.01	1.45	0.00	1.45	0.39	0.00	0.39
Worker Trips	Building Construction	2046	0.20	0.14	1.67	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2047	0.20	0.14	1.67	0.01	1.46	0.00	1.46	0.39	0.00	0.39
Worker Trips	Building Construction	2048	0.21	0.14	1.68	0.01	1.46	0.00	1.47	0.39	0.00	0.39
Worker Trips	Building Construction	2049	0.14	0.10	1.15	0.01	1.00	0.00	1.00	0.27	0.00	0.27
Worker Trips	Paving	2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2029	0.01	0.01	0.09	0.00	0.05	0.00	0.05	0.01	0.00	0.01
Worker Trips	Architectural Coating	2034	0.01	0.00	0.06	0.00	0.04	0.00	0.04	0.01	0.00	0.01
Worker Trips	Architectural Coating	2049	0.01	0.00	0.05	0.00	0.05	0.00	0.05	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : [1]Annual VOC evaporative emissions from architectural coating were manually distributed evenly from 2028-2049.

[2]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-6 Annual Construction Emissions by Source Category and Phase, Alternative 5, Private Development

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Fugitive Dust	Demolition	2026	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.11	0.00	0.11
Fugitive Dust	Site Preparation	2026	0.00	0.00	0.00	0.00	0.16	0.00	0.16	0.09	0.00	0.09
Fugitive Dust	Grading and Utilities	2026	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2030	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.02	0.00	0.02
Fugitive Dust	Grading and Utilities	2035	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.05	0.00	0.05
Off-Road Equipment	Demolition	2026	0.02	0.07	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Site Preparation	2026	0.01	0.04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2026	0.02	0.08	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2030	0.01	0.06	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Grading and Utilities	2035	0.04	0.17	1.69	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2026	0.03	0.13	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2027	0.01	0.06	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2030	0.04	0.16	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Foundation Drilling	2035	0.05	0.23	1.94	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Foundation Drilling	2036	0.05	0.20	1.66	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Off-Road Equipment	Building Construction	2026	0.22	1.11	7.58	0.01	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2027	0.46	2.35	16.09	0.02	0.00	0.07	0.07	0.00	0.07	0.07
Off-Road Equipment	Building Construction	2028	0.46	2.34	16.03	0.02	0.00	0.07	0.07	0.00	0.07	0.07
Off-Road Equipment	Building Construction	2029	0.39	2.01	13.75	0.02	0.00	0.06	0.06	0.00	0.06	0.06
Off-Road Equipment	Building Construction	2030	0.37	2.03	14.69	0.03	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2031	0.41	2.22	16.05	0.03	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2032	0.41	2.22	16.11	0.03	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2033	0.41	2.21	15.98	0.03	0.00	0.05	0.05	0.00	0.05	0.05
Off-Road Equipment	Building Construction	2034	0.36	1.95	14.14	0.02	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2035	0.30	1.67	12.29	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Building Construction	2036	0.40	2.18	16.09	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2037	0.39	2.17	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2038	0.39	2.17	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2039	0.39	2.17	15.97	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2040	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2041	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2042	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2043	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2044	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2045	0.39	2.15	15.97	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2046	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2047	0.39	2.16	16.03	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2048	0.40	2.16	16.09	0.03	0.00	0.04	0.04	0.00	0.04	0.04
Off-Road Equipment	Building Construction	2049	0.27	1.48	10.99	0.02	0.00	0.03	0.03	0.00	0.03	0.03
Off-Road Equipment	Paving	2029	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2034	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Paving	2049	0.01	0.02	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2029	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2034	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Equipment	Architectural Coating	2049	0.00	0.02	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2029	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2034	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off-Gas	Paving	2049	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2028	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2029	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2030	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table D-A1.1-6 Annual Construction Emissions by Source Category and Phase, Alternative 5, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Architectural Coating	Architectural Coating	2031	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2032	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2033	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2034	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2035	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2036	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2037	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2038	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2039	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2040	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2041	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2042	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2043	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2044	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2045	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2046	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2047	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2048	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Architectural Coating	2049	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul Trucks	Demolition	2026	0.04	1.15	0.47	0.01	0.13	0.00	0.13	0.04	0.00	0.04
Haul Trucks	Grading and Utilities	2026	0.03	0.95	0.39	0.00	0.11	0.00	0.11	0.03	0.00	0.03
Haul Trucks	Grading and Utilities	2030	0.02	0.70	0.32	0.00	0.09	0.00	0.09	0.02	0.00	0.02
Haul Trucks	Grading and Utilities	2035	0.06	1.82	0.91	0.01	0.24	0.00	0.24	0.06	0.00	0.07
Vendor Trips	Foundation Drilling	2026	0.00	0.09	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2027	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2030	0.00	0.10	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2035	0.00	0.14	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Foundation Drilling	2036	0.00	0.12	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor Trips	Building Construction	2026	0.05	1.75	0.53	0.01	0.16	0.00	0.16	0.05	0.00	0.05
Vendor Trips	Building Construction	2027	0.10	3.65	1.11	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2028	0.10	3.60	1.10	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2029	0.08	3.05	0.93	0.01	0.29	0.00	0.29	0.08	0.00	0.09
Vendor Trips	Building Construction	2030	0.09	3.23	1.00	0.01	0.31	0.00	0.31	0.09	0.00	0.09
Vendor Trips	Building Construction	2031	0.09	3.50	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2032	0.09	3.48	1.09	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2033	0.09	3.43	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2034	0.08	3.01	0.95	0.01	0.30	0.00	0.30	0.09	0.00	0.09
Vendor Trips	Building Construction	2035	0.07	2.61	0.83	0.01	0.26	0.00	0.26	0.07	0.00	0.08
Vendor Trips	Building Construction	2036	0.09	3.42	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2037	0.09	3.40	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2038	0.09	3.40	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2039	0.09	3.39	1.08	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2040	0.09	3.34	1.07	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2041	0.09	3.34	1.07	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2042	0.09	3.34	1.07	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2043	0.09	3.34	1.07	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2044	0.09	3.34	1.07	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2045	0.09	3.31	1.05	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2046	0.09	3.32	1.05	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2047	0.09	3.32	1.05	0.01	0.34	0.00	0.34	0.10	0.00	0.10
Vendor Trips	Building Construction	2048	0.09	3.33	1.05	0.01	0.34	0.00	0.34	0.10	0.00	0.10

Table D-A1.1-6 Annual Construction Emissions by Source Category and Phase, Alternative 5, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Vendor Trips	Building Construction	2049	0.06	2.28	0.72	0.01	0.23	0.00	0.23	0.07	0.00	0.07
Worker Trips	Demolition	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Site Preparation	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2026	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2030	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Grading and Utilities	2035	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2026	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2027	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2030	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	Foundation Drilling	2035	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker Trips	Foundation Drilling	2036	0.00	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.00	0.00
Worker Trips	Building Construction	2026	0.51	0.30	3.28	0.01	1.49	0.01	1.50	0.40	0.01	0.41
Worker Trips	Building Construction	2027	1.03	0.60	6.56	0.02	3.17	0.02	3.19	0.84	0.02	0.86
Worker Trips	Building Construction	2028	0.97	0.56	6.19	0.02	3.15	0.02	3.17	0.84	0.02	0.85
Worker Trips	Building Construction	2029	0.79	0.45	5.03	0.02	2.71	0.01	2.72	0.72	0.01	0.73
Worker Trips	Building Construction	2030	0.79	0.45	5.11	0.02	2.90	0.01	2.91	0.77	0.01	0.78
Worker Trips	Building Construction	2031	0.80	0.46	5.29	0.02	3.17	0.01	3.18	0.84	0.01	0.85
Worker Trips	Building Construction	2032	0.75	0.44	5.05	0.02	3.18	0.01	3.19	0.84	0.01	0.86
Worker Trips	Building Construction	2033	0.70	0.41	4.79	0.02	3.15	0.01	3.17	0.84	0.01	0.85
Worker Trips	Building Construction	2034	0.58	0.35	4.06	0.02	2.79	0.01	2.80	0.74	0.01	0.75
Worker Trips	Building Construction	2035	0.17	0.10	1.22	0.01	0.87	0.00	0.88	0.23	0.00	0.24
Worker Trips	Building Construction	2036	0.23	0.14	1.60	0.01	1.15	0.00	1.15	0.30	0.00	0.31
Worker Trips	Building Construction	2037	0.23	0.14	1.59	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2038	0.23	0.14	1.59	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2039	0.23	0.14	1.59	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2040	0.18	0.12	1.39	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2041	0.18	0.12	1.39	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2042	0.18	0.12	1.39	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2043	0.18	0.12	1.39	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2044	0.18	0.12	1.39	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2045	0.16	0.11	1.30	0.01	1.14	0.00	1.14	0.30	0.00	0.30
Worker Trips	Building Construction	2046	0.16	0.11	1.31	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2047	0.16	0.11	1.31	0.01	1.14	0.00	1.14	0.30	0.00	0.31
Worker Trips	Building Construction	2048	0.16	0.11	1.31	0.01	1.15	0.00	1.15	0.30	0.00	0.31
Worker Trips	Building Construction	2049	0.11	0.08	0.90	0.00	0.78	0.00	0.78	0.21	0.00	0.21
Worker Trips	Paving	2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Paving	2049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	Architectural Coating	2029	0.01	0.01	0.09	0.00	0.05	0.00	0.05	0.01	0.00	0.01
Worker Trips	Architectural Coating	2034	0.01	0.00	0.05	0.00	0.04	0.00	0.04	0.01	0.00	0.01
Worker Trips	Architectural Coating	2049	0.01	0.00	0.04	0.00	0.04	0.00	0.04	0.01	0.00	0.01

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : [1]Annual VOC evaporative emissions from architectural coating were manually distributed evenly from 2028-2049.

[2]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.1-7 Annual Construction Emissions by Year, Alternative 1

Year	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2021	0.43	5.36	6.56	0.02	1.01	0.04	1.05	0.29	0.03	0.33
2022	0.56	5.16	7.73	0.03	0.98	0.04	1.02	0.27	0.04	0.31
2023	0.51	4.22	7.48	0.02	0.98	0.03	1.01	0.27	0.03	0.30
2024	0.49	4.18	7.37	0.02	0.99	0.03	1.02	0.27	0.03	0.30
2025	5.07	2.42	4.92	0.02	0.60	0.02	0.62	0.16	0.02	0.18
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2036	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2037	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2038	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2039	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2040	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2041	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2043	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2044	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2045	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2047	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2048	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**5.07**	**5.36**	**7.73**	**0.03**	**1.01**	**0.04**	**1.05**	**0.29**	**0.04**	**0.33**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Table D-A1.1-8 Annual Construction Emissions by Year, Alternative 2

Year [(1)(2)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2021	1.15	3.69	14.88	0.04	2.18	0.07	2.25	0.59	0.07	0.66
2022	1.27	2.74	16.10	0.04	2.38	0.07	2.45	0.63	0.07	0.70
2023	1.20	2.51	15.59	0.04	2.38	0.06	2.44	0.63	0.06	0.70
2024	1.16	2.45	15.28	0.04	2.39	0.06	2.45	0.64	0.06	0.70
2025	4.13	2.04	12.88	0.03	2.06	0.05	2.11	0.55	0.05	0.60
2026	0.54	5.26	12.07	0.04	1.86	0.05	1.91	0.47	0.05	0.52
2027	0.80	5.35	16.80	0.04	1.28	0.07	1.35	0.35	0.07	0.42
2028	2.13	5.28	16.62	0.04	1.28	0.07	1.35	0.35	0.07	0.42
2029	2.04	4.51	14.46	0.03	1.11	0.06	1.17	0.30	0.06	0.36
2030	2.06	5.75	16.94	0.05	1.34	0.05	1.39	0.37	0.05	0.42
2031	2.03	5.06	16.34	0.04	1.28	0.05	1.33	0.35	0.05	0.40
2032	2.02	5.04	16.32	0.04	1.29	0.05	1.34	0.35	0.05	0.40
2033	2.00	4.97	16.13	0.04	1.28	0.05	1.32	0.35	0.05	0.39
2034	1.95	4.39	14.44	0.04	1.14	0.04	1.18	0.31	0.04	0.35
2035	2.00	6.53	17.13	0.05	1.44	0.05	1.49	0.41	0.05	0.46
2036	1.98	5.01	16.53	0.04	1.29	0.04	1.34	0.35	0.04	0.39
2037	1.96	4.91	16.05	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2038	1.96	4.91	16.05	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2039	1.96	4.89	15.99	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2040	1.92	4.83	15.86	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2041	1.92	4.83	15.86	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2042	1.92	4.83	15.86	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2043	1.92	4.83	15.86	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2044	1.92	4.83	15.86	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2045	1.90	4.79	15.72	0.04	1.28	0.04	1.31	0.35	0.04	0.38
2046	1.90	4.81	15.78	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2047	1.90	4.81	15.78	0.04	1.28	0.04	1.32	0.35	0.04	0.39
2048	1.90	4.82	15.84	0.04	1.29	0.04	1.32	0.35	0.04	0.39
2049	1.77	3.34	11.44	0.03	0.91	0.03	0.94	0.25	0.03	0.27
2050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**4.13**	**6.53**	**17.13**	**0.05**	**2.39**	**0.07**	**2.45**	**0.64**	**0.07**	**0.70**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]Total CalEEMod-predicted architectural coating VOC emissions during private development construction were evenly distributed from 2028-2049.

Table D-A1.1-9 Annual Construction Emissions by Year, Alternative 3

Year [(1)(2)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2021	1.1	3.7	14.9	0.04	2.2	0.07	2.3	0.6	0.07	0.7
2022	1.3	2.7	16.1	0.04	2.4	0.07	2.4	0.6	0.07	0.7
2023	1.2	2.5	15.6	0.04	2.4	0.06	2.4	0.6	0.06	0.7
2024	1.2	2.5	15.3	0.04	2.4	0.06	2.5	0.6	0.06	0.7
2025	4.1	2.0	12.9	0.03	2.1	0.05	2.1	0.5	0.05	0.6
2026	0.4	4.5	9.3	0.03	1.7	0.04	1.7	0.4	0.04	0.5
2027	0.5	3.7	11.2	0.03	0.9	0.05	0.9	0.2	0.05	0.3
2028	1.4	3.7	11.1	0.03	0.9	0.05	0.9	0.2	0.05	0.3
2029	1.4	3.1	9.7	0.02	0.8	0.04	0.8	0.2	0.04	0.2
2030	1.4	4.3	11.8	0.03	1.0	0.04	1.0	0.3	0.04	0.3
2031	1.4	3.5	10.9	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2032	1.3	3.5	10.9	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2033	1.3	3.5	10.8	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2034	1.3	3.1	9.7	0.03	0.8	0.03	0.8	0.2	0.03	0.2
2035	1.4	5.4	13.1	0.04	1.1	0.04	1.2	0.3	0.04	0.4
2036	1.3	3.4	10.8	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2037	1.3	3.4	10.7	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2038	1.3	3.4	10.7	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2039	1.3	3.4	10.7	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2040	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2041	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2042	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2043	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2044	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2045	1.3	3.3	10.5	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2046	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2047	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2048	1.3	3.4	10.6	0.03	0.9	0.03	0.9	0.2	0.03	0.3
2049	1.2	2.3	7.8	0.02	0.6	0.02	0.6	0.2	0.02	0.2
2050	0.0	0.0	0.0	0.00	0.0	0.00	0.0	0.0	0.00	0.0
Maximum	**4.1**	**5.4**	**16.1**	**0.04**	**2.4**	**0.07**	**2.5**	**0.6**	**0.07**	**0.7**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]Total CalEEMod-predicted architectural coating VOC emissions during private development construction were evenly distributed from 2028-2049.

Table D-A1.1-10 Annual Construction Emissions by Year, Alternative 4

Year [1][2]	VOC (ton/yr)	NO_x (ton/yr)	CO (ton/yr)	SO_x (ton/yr)	Fugitive PM_{10} (ton/yr)	Exhaust PM_{10} (ton/yr)	PM_{10} (ton/yr)	Fugitive $PM_{2.5}$ (ton/yr)	Exhaust $PM_{2.5}$ (ton/yr)	$PM_{2.5}$ (ton/yr)
2021	1.1	3.7	14.9	0.04	2.2	0.07	2.3	0.6	0.07	0.7
2022	1.3	2.7	16.1	0.04	2.4	0.07	2.4	0.6	0.07	0.7
2023	1.2	2.5	15.6	0.04	2.4	0.06	2.4	0.6	0.06	0.7
2024	1.2	2.5	15.3	0.04	2.4	0.06	2.5	0.6	0.06	0.7
2025	4.1	2.0	12.9	0.03	2.1	0.05	2.1	0.5	0.05	0.6
2026	1.0	6.6	18.1	0.05	3.1	0.07	3.2	0.8	0.07	0.9
2027	1.9	8.3	29.7	0.08	3.9	0.12	4.0	1.0	0.12	1.2
2028	3.8	8.1	28.8	0.07	3.9	0.12	4.0	1.0	0.11	1.2
2029	3.5	6.9	24.8	0.06	3.4	0.10	3.5	0.9	0.10	1.0
2030	3.6	8.2	28.0	0.08	3.7	0.09	3.8	1.0	0.08	1.1
2031	3.5	7.7	27.8	0.08	3.9	0.08	4.0	1.0	0.08	1.1
2032	3.5	7.7	27.6	0.08	3.9	0.08	4.0	1.0	0.08	1.1
2033	3.4	7.5	27.2	0.07	3.9	0.08	4.0	1.0	0.08	1.1
2034	3.3	6.7	24.1	0.07	3.5	0.07	3.5	0.9	0.07	1.0
2035	2.9	8.1	23.1	0.07	1.9	0.06	1.9	0.5	0.06	0.6
2036	3.0	7.5	25.6	0.07	1.9	0.07	2.0	0.5	0.07	0.6
2037	2.9	7.2	24.0	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2038	2.9	7.2	24.0	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2039	2.9	7.2	23.9	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2040	2.9	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2041	2.9	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2042	2.9	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2043	2.9	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2044	2.9	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2045	2.8	7.0	23.5	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2046	2.8	7.0	23.6	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2047	2.8	7.0	23.6	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2048	2.8	7.1	23.7	0.06	1.9	0.06	1.9	0.5	0.06	0.6
2049	2.6	4.9	16.9	0.04	1.3	0.04	1.4	0.4	0.04	0.4
2050	0.0	0.0	0.0	0.00	0.0	0.00	0.0	0.0	0.00	0.0
Maximum	**4.1**	**8.3**	**29.7**	**0.08**	**3.9**	**0.12**	**4.0**	**1.0**	**0.12**	**1.2**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1) Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

(2) Total CalEEMod-predicted architectural coating VOC emissions during private development construction were evenly distributed from 2028-2049.

Table D-A1.1-11 Annual Construction Emissions by Year, Alternative 5

Year [(1)(2)]	VOC (ton/yr)	NO_x (ton/yr)	CO (ton/yr)	SO_x (ton/yr)	Fugitive PM_{10} (ton/yr)	Exhaust PM_{10} (ton/yr)	PM_{10} (ton/yr)	Fugitive $PM_{2.5}$ (ton/yr)	Exhaust $PM_{2.5}$ (ton/yr)	$PM_{2.5}$ (ton/yr)
2021	1.1	3.7	14.9	0.04	2.2	0.07	2.3	0.6	0.07	0.7
2022	1.3	2.7	16.1	0.04	2.4	0.07	2.4	0.6	0.07	0.7
2023	1.2	2.5	15.6	0.04	2.4	0.06	2.4	0.6	0.06	0.7
2024	1.2	2.5	15.3	0.04	2.4	0.06	2.5	0.6	0.06	0.7
2025	4.1	2.0	12.9	0.03	2.1	0.05	2.1	0.5	0.05	0.6
2026	0.9	5.7	15.5	0.05	2.9	0.06	2.9	0.7	0.06	0.8
2027	1.6	6.7	24.3	0.06	3.5	0.10	3.6	0.9	0.10	1.0
2028	3.1	6.5	23.3	0.06	3.5	0.09	3.6	0.9	0.09	1.0
2029	2.9	5.5	20.1	0.05	3.0	0.08	3.1	0.8	0.08	0.9
2030	2.9	6.7	23.1	0.07	3.4	0.07	3.4	0.9	0.07	1.0
2031	2.9	6.2	22.4	0.06	3.5	0.07	3.6	0.9	0.07	1.0
2032	2.9	6.1	22.2	0.06	3.5	0.07	3.6	0.9	0.07	1.0
2033	2.8	6.0	21.9	0.06	3.5	0.07	3.6	0.9	0.06	1.0
2034	2.7	5.3	19.4	0.05	3.1	0.06	3.2	0.8	0.06	0.9
2035	2.3	6.7	19.0	0.06	1.5	0.05	1.6	0.4	0.05	0.5
2036	2.4	6.1	20.5	0.05	1.5	0.06	1.6	0.4	0.06	0.5
2037	2.3	5.7	18.7	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2038	2.3	5.7	18.7	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2039	2.3	5.7	18.6	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2040	2.3	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2041	2.3	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2042	2.3	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2043	2.3	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2044	2.3	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2045	2.2	5.6	18.3	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2046	2.2	5.6	18.4	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2047	2.2	5.6	18.4	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2048	2.2	5.6	18.5	0.05	1.5	0.05	1.5	0.4	0.05	0.4
2049	2.1	3.9	13.3	0.03	1.1	0.03	1.1	0.3	0.03	0.3
2050	0.0	0.0	0.0	0.00	0.0	0.00	0.0	0.0	0.00	0.0
Maximum	**4.1**	**6.7**	**24.3**	**0.07**	**3.5**	**0.10**	**3.6**	**0.9**	**0.10**	**1.0**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1) Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

(2) Total CalEEMod-predicted architectural coating VOC emissions during private development construction were evenly distributed from 2028-2049.

Table D-A1.1-12 HAP Speciation Factors for Total Organic Gas Emissions (Percent by Weight)

Source Type	***TOG to VOC Ratio*** [1]	***Acetaldehyde***	***Acetonitrile***	***Acrolein***	***Acrylonitrile***	***Benzene***	***1,3-butadiene***	***Carbon disulfide***	***Carbon tetrachloride***	***Chloroform***	***Cumene***	***Ethyl Chloride***	***Ethylbenzene***	***Ethylene Dibromide***	***Formaldehyde***	***Methyl alcohol (Methanol)***	***Methyl Bromide***
Architectural Coating[2]	1.33	3.45	-	-	-	-	-	-	-	-	-	-	0.82	-	0.49	-	-
Off-Road Equipment[3]	1.09	9.51	-	1.70	-	5.07	0.19	-	-	-	-	-	0.39	-	26.60	-	-
Paving Off-Gas[4]	1.25	-	-	-	-	9.50	-	-	-	-	-	-	-	-	-	-	-
Truck Trips[5]	2.25	3.62	-	0.91	-	0.47	0.37	-	-	-	0.01	-	0.14	-	8.10	-	-
Worker Vehicles[6]	1.58	1.04	0.46	1.50	0.01	2.23	0.30	0.002	0.0001	0.001	0.01	0.001	0.23	0.001	1.04	-	0.00003
Landscaping Equipment[7]	1.02	1.49	-	0.16	-	3.24	1.16	-	-	-	-	-	1.46	-	4.76	-	-
Consumer Products[8]	1.27	-	-	-	-	-	-	-	-	-	-	-	0.06	-	-	1.84	-
Natural Gas Use[9]	2.27	-	-	-	-	4.00	-	-	-	-	-	-	-	-	8.00	-	-

Legend : TOG = total organic gas; VOC = volatile organic compounds.

Notes : [1]Ratio is used to convert VOC emissions to TOG emissions prior to multiplying by the speciation factors.

[2]Speciate 5.1 model TOG profile ID 4661 - Industrial surface coating operations - water based.

[3]Speciate 5.1 model TOG profile ID 95333 - Diesel Off-road Engines.

[4]Speciate 5.1 model TOG profile ID 0026 - Asphaltic Concrete - In Place Road Asphalt.

[5]Speciate 5.1 model TOG profile ID 103VBS - Heavy Duty Diesel with DPF.

[6]Speciate 5.1 model TOG profile ID 8905 - Gasoline Exhaust - E10 gasoline, summer grade, LA92 cycle composite.

[7]Speciate 5.1 model TOG profile ID 95506 - 4-Stroke Small Off-road Engine Exhaust - MTBE Gasoline.

[8]Speciate 5.1 model TOG profile ID 3040 - Consumer Products: Multipurpose Solvents.

[9]Speciate 5.1 model TOG profile ID 0003 - External Combustion Boiler - Natural Gas.

Table D-A1.1-12 HAP Speciation Factors for Total Organic Gas Emissions (Percent by Weight), Continued

Source Type	TOG to VOC Ratio (1)	Methyl Chloride	Methyl isobutyl ketone (Hexone)	Methyl Methacrylate	Methylene Chloride	Naphthalene	N-hexane	Perchloroethylene	Propionaldehyde	Styrene	Toluene	1,1,1-trichloroethane	Trichloroethylene	2,2,4-trimethylpentane	Xylenes (Isomers)	M,P-xylene	O-xylene	Vinyl Chloride
Architectural Coating(2)	1.33	-	3.12	-	-	-	-	-	0.49	-	4.27	-	-	0.66	-	3.45	1.31	-
Off-Road Equipment(3)	1.09	-	-	-	-	-	-	-	1.99	-	3.43	-	-	0.73	-	1.07	-	-
Paving Off-Gas(4)	1.25	-	-	-	-	-	8.80	-	-	-	-	-	-	-	-	-	-	-
Truck Trips(5)	2.25	-	-	-	-	-	0.33	-	0.45	0.02	0.29	-	-	0.28	-	0.27	0.12	-
Worker Vehicles(6)	1.58	0.004	0.06	-	0.01	0.05	0.18	0.001	0.02	0.14	2.42	-	-	3.45	-	0.82	0.19	0.0001
Landscaping Equipment(7)	1.02	-	-	-	-	0.09	1.26	-	0.11	-	7.09	-	-	1.91	-	5.13	1.87	-
Consumer Products(8)	1.27	-	0.52	0.01	0.26	-	0.89	0.40	-	-	3.65	0.28	0.86	-	0.29	-	-	-
Natural Gas Use(9)	2.27	-	-	-	-	-	-	-	-	-	2.00	-	-	-	-	-	-	-

Legend : TOG = total organic gas; VOC = volatile organic compounds.

Notes : (1)Ratio is used to convert VOC emissions to TOG emissions prior to multiplying by the speciation factors.

(2)Speciate 5.1 model TOG profile ID 4661 - Industrial surface coating operations - water based.

(3)Speciate 5.1 model TOG profile ID 95333 - Diesel Off-road Engines.

(4)Speciate 5.1 model TOG profile ID 0026 - Asphaltic Concrete - In Place Road Asphalt.

(5)Speciate 5.1 model TOG profile ID 103VBS - Heavy Duty Diesel with DPF.

(6)Speciate 5.1 model TOG profile ID 8905 - Gasoline Exhaust - E10 gasoline, summer grade, LA92 cycle composite.

(7)Speciate 5.1 model TOG profile ID 95506 - 4-Stroke Small Off-road Engine Exhaust - MTBE Gasoline.

(8)Speciate 5.1 model TOG profile ID 3040 - Consumer Products: Multipurpose Solvents.

(9)Speciate 5.1 model TOG profile ID 0003 - External Combustion Boiler - Natural Gas.

Table D-A1.1-13 HAP Speciation Factors for Particulate Matter Emissions (Percent by Weight)

Source Type [(1)]	*Antimony*	*Arsenic*	*Cadmium*	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methyl-fluoranthene, C-methyl-pyrene/ fluoranthene*	*C-methyl-pyrene & methyl-fluoranthene*
Fugitive Dust[(2)]	0.01	0.001	-	-	0.001	0.003	0.01	0.10	-	0.001	0.08	0.0003	-	-	-	-
Off-Road Equipment[(3)]	0.01	0.00	0.00	-	0.00	0.00	0.00	0.01	0.00	0.00	-	0.00	-	-	-	-
Truck Trips[(4)]	-	0.00	0.01	-	-	0.001	0.005	0.001	0.001	0.002	0.07	0.001	0.001	-	-	-
Worker Vehicles[(5)]	0.06	0.01	0.01	0.10	0.01	0.004	0.004	0.005	-	0.002	-	-	-	4.54	0.005	0.003
Natural Gas Use[(6)]	-	-	-	-	0.050	-	-	0.020	-	0.090	0.030	0.061	-	-	-	-

Notes: [(1)]Original Off-Road Equipment factors converted from PM10 weight fraction to PM10 weight percent. = PM10 for Fugitive Dust, Off-Road Equipment, and Truck Trips. = PM2.5 for Worker Vehicles and Natural Gas Use.

[(2)]Speciate 5.1 model PM profile ID 4158 - Construction dust.

[(3)]Average of CARB PM profile IDs 6139, 6149, 6159, 6169, and 6179 - Off-road Diesel Vehicle Exhaust.

[(4)]Average of Speciate 5.1 model PM profile IDs 4945, 4951, 4957, 4961, 4966, and 4969 - Diesel Exhaust - Heavy-heavy Duty Truck.

[(5)]Speciate 5.1 model PM profile ID 5566 - Light Duty Vehicle Exhaust - Gasoline.

[(6)]Speciate 5.1 model PM profile 91156 - Residential Natural Gas Combustion - Composite.

Table D-A1.1-14 Annual Construction HAP Emissions by Year, Alternative 1 (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2021	2.64E-02	1.25E-03	9.12E-03	1.54E-05	1.41E-02	2.20E-03	4.68E-06	2.18E-07	2.54E-06	7.82E-05	1.87E-06	1.57E-03	1.97E-06	6.25E-02	0.00E+00	8.19E-08	1.05E-05	1.54E-04
2022	3.01E-02	2.07E-03	1.20E-02	2.54E-05	1.94E-02	2.68E-03	7.73E-06	3.59E-07	4.20E-06	9.80E-05	3.09E-06	2.06E-03	3.25E-06	6.99E-02	0.00E+00	1.35E-07	1.74E-05	2.55E-04
2023	2.69E-02	1.96E-03	1.10E-02	2.41E-05	1.82E-02	2.36E-03	7.32E-06	3.41E-07	3.98E-06	8.62E-05	2.93E-06	1.89E-03	3.08E-06	6.27E-02	0.00E+00	1.28E-07	1.65E-05	2.41E-04
2024	2.61E-02	1.88E-03	1.06E-02	2.31E-05	1.76E-02	2.27E-03	7.02E-06	3.26E-07	3.81E-06	8.30E-05	2.81E-06	1.82E-03	2.96E-06	6.09E-02	0.00E+00	1.23E-07	1.58E-05	2.31E-04
2025	2.33E-01	1.12E-03	6.34E-03	1.37E-05	1.59E-02	1.34E-03	4.17E-06	1.94E-07	2.27E-06	4.83E-05	1.67E-06	5.28E-02	1.76E-06	6.83E-02	0.00E+00	7.30E-08	9.39E-06	1.97E-01
Maximum	**2.33E-01**	**2.07E-03**	**1.20E-02**	**2.54E-05**	**1.94E-02**	**2.68E-03**	**7.73E-06**	**3.59E-07**	**4.20E-06**	**9.80E-05**	**3.09E-06**	**5.28E-02**	**3.25E-06**	**6.99E-02**	**0.00E+00**	**1.35E-07**	**1.74E-05**	**1.97E-01**

Table D-A1.1-14 Annual Construction HAP Emissions by Year, Alternative 1 (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2021	0.00E+00	1.37E-05	1.42E-04	1.53E-03	1.57E-06	4.04E-03	4.51E-04	1.19E-02	0.00E+00	0.00E+00	1.12E-02	0.00E+00	4.44E-03	8.67E-04	3.98E-07	2.51E-05	2.07E-06	2.11E-06
2022	0.00E+00	2.26E-05	2.34E-04	1.76E-03	2.60E-06	4.52E-03	6.90E-04	1.71E-02	0.00E+00	0.00E+00	1.74E-02	0.00E+00	6.13E-03	1.16E-03	6.57E-07	4.64E-06	3.05E-07	2.09E-06
2023	0.00E+00	2.14E-05	2.22E-04	1.51E-03	2.46E-06	4.10E-03	6.42E-04	1.61E-02	0.00E+00	0.00E+00	1.64E-02	0.00E+00	5.70E-03	1.05E-03	6.23E-07	4.42E-06	2.84E-07	1.58E-06
2024	0.00E+00	2.05E-05	2.13E-04	1.45E-03	2.36E-06	3.99E-03	6.16E-04	1.55E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	5.49E-03	1.01E-03	5.97E-07	4.26E-06	2.78E-07	1.52E-06
2025	0.00E+00	1.22E-05	1.27E-04	5.60E-03	1.40E-06	3.33E-02	3.65E-04	2.79E-01	0.00E+00	0.00E+00	5.10E-02	0.00E+00	2.21E-01	8.31E-02	3.55E-07	2.59E-06	1.69E-07	9.00E-07
Maximum	**0.00E+00**	**2.26E-05**	**2.34E-04**	**5.60E-03**	**2.60E-06**	**3.33E-02**	**6.90E-04**	**2.79E-01**	**0.00E+00**	**0.00E+00**	**5.10E-02**	**0.00E+00**	**2.21E-01**	**8.31E-02**	**6.57E-07**	**2.51E-05**	**2.07E-06**	**2.11E-06**

Table D-A1.1-14 Annual Construction HAP Emissions by Year, Alternative 1 (tons per year), Continued

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene/fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2021	2.49E-06	3.39E-06	9.32E-06	1.92E-05	3.14E-04	2.45E-07	3.52E-06	2.45E-04	1.23E-06	1.02E-07	1.17E-04	1.27E-07	7.46E-08	6.25E-02	1.53E-01
2022	4.24E-06	8.36E-07	4.00E-07	8.26E-07	1.79E-06	2.54E-07	4.37E-07	5.95E-06	3.07E-07	7.04E-08	2.00E-04	2.17E-07	1.27E-07	6.99E-02	1.88E-01
2023	4.15E-06	7.83E-07	3.44E-07	6.03E-07	1.61E-06	2.03E-07	3.48E-07	2.90E-06	2.42E-07	3.43E-08	1.96E-04	2.12E-07	1.25E-07	6.27E-02	1.71E-01
2024	4.11E-06	7.44E-07	3.32E-07	5.80E-07	1.51E-06	1.90E-07	3.30E-07	2.85E-06	2.27E-07	3.37E-08	1.93E-04	2.10E-07	1.23E-07	6.09E-02	1.66E-01
2025	2.53E-06	4.49E-07	2.00E-07	3.42E-07	9.01E-07	1.12E-07	1.96E-07	1.59E-06	1.34E-07	1.88E-08	1.19E-04	1.29E-07	7.58E-08	2.79E-01	1.25E+00
Maximum	**4.24E-06**	**3.39E-06**	**9.32E-06**	**1.92E-05**	**3.14E-04**	**2.54E-07**	**3.52E-06**	**2.45E-04**	**1.23E-06**	**1.02E-07**	**2.00E-04**	**2.17E-07**	**1.27E-07**	**2.79E-01**	**1.25E+00**

Table D-A1.1-15 Annual Construction HAP Emissions by Year, Alternatives 2 through 5, Navy Development (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2021	4.60E-02	6.01E-03	2.62E-02	7.38E-05	3.24E-02	6.55E-03	2.24E-05	1.04E-06	1.22E-05	2.72E-04	8.98E-06	4.05E-03	9.45E-06	7.26E-02	0.00E+00	3.93E-07	5.05E-05	7.40E-04
2022	4.76E-02	6.97E-03	2.91E-02	8.57E-05	3.70E-02	7.06E-03	2.61E-05	1.21E-06	1.42E-05	2.96E-04	1.04E-05	4.49E-03	1.10E-05	7.24E-02	0.00E+00	4.56E-07	5.86E-05	8.59E-04
2023	4.52E-02	6.61E-03	2.76E-02	8.13E-05	3.50E-02	6.69E-03	2.47E-05	1.15E-06	1.34E-05	2.81E-04	9.89E-06	4.26E-03	1.04E-05	6.86E-02	0.00E+00	4.32E-07	5.56E-05	8.15E-04
2024	4.38E-02	6.34E-03	2.65E-02	7.79E-05	3.36E-02	6.45E-03	2.37E-05	1.10E-06	1.29E-05	2.70E-04	9.48E-06	4.10E-03	9.97E-06	6.65E-02	0.00E+00	4.14E-07	5.33E-05	7.81E-04
2025	1.82E-01	5.20E-03	2.18E-02	6.39E-05	2.78E-02	5.32E-03	1.94E-05	9.04E-07	1.06E-05	2.23E-04	7.78E-06	3.80E-02	8.18E-06	7.59E-02	0.00E+00	3.40E-07	4.37E-05	1.33E-01
Maximum	**1.82E-01**	**6.97E-03**	**2.91E-02**	**8.57E-05**	**3.70E-02**	**7.06E-03**	**2.61E-05**	**1.21E-06**	**1.42E-05**	**2.96E-04**	**1.04E-05**	**3.80E-02**	**1.10E-05**	**7.59E-02**	**0.00E+00**	**4.56E-07**	**5.86E-05**	**1.33E-01**

Table D-A1.1-15 Annual Construction HAP Emissions by Year, Alternatives 2 through 5, Navy Development (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2021	0.00E+00	6.56E-05	6.80E-04	4.81E-03	7.55E-06	3.52E-03	1.98E-03	3.36E-02	0.00E+00	0.00E+00	4.69E-02	0.00E+00	1.26E-02	3.27E-03	1.91E-06	2.30E-05	1.74E-06	3.32E-06
2022	0.00E+00	7.62E-05	7.90E-04	5.10E-03	8.77E-06	3.42E-03	2.27E-03	3.86E-02	0.00E+00	0.00E+00	5.41E-02	0.00E+00	1.43E-02	3.63E-03	2.22E-06	1.31E-05	8.87E-07	3.29E-06
2023	0.00E+00	7.22E-05	7.49E-04	4.83E-03	8.32E-06	3.25E-03	2.15E-03	3.66E-02	0.00E+00	0.00E+00	5.12E-02	0.00E+00	1.35E-02	3.44E-03	2.10E-06	1.26E-05	8.60E-07	3.06E-06
2024	0.00E+00	6.92E-05	7.18E-04	4.66E-03	7.97E-06	3.15E-03	2.06E-03	3.51E-02	0.00E+00	0.00E+00	4.91E-02	0.00E+00	1.30E-02	3.31E-03	2.01E-06	1.22E-05	8.42E-07	2.93E-06
2025	0.00E+00	5.68E-05	5.89E-04	4.04E-03	6.54E-06	2.33E-02	1.69E-03	2.09E-01	0.00E+00	0.00E+00	6.82E-02	0.00E+00	1.57E-01	5.81E-02	1.65E-06	1.02E-05	7.10E-07	2.41E-06
Maximum	**0.00E+00**	**7.62E-05**	**7.90E-04**	**5.10E-03**	**8.77E-06**	**2.33E-02**	**2.27E-03**	**2.09E-01**	**0.00E+00**	**0.00E+00**	**6.82E-02**	**0.00E+00**	**1.57E-01**	**5.81E-02**	**2.22E-06**	**2.30E-05**	**1.74E-06**	**3.32E-06**

Table D-A1.1-15 Annual Construction HAP Emissions by Year, Alternatives 2 through 5, Navy Development (tons per year), Continued

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene /fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2021	1.19E-05	3.34E-06	5.58E-06	1.09E-05	1.69E-04	3.95E-07	2.36E-06	1.29E-04	9.61E-07	4.29E-08	5.60E-04	6.09E-07	3.57E-07	7.26E-02	3.03E-01
2022	1.44E-05	2.09E-06	9.11E-07	1.19E-06	3.70E-06	3.81E-07	7.27E-07	9.47E-07	4.48E-07	1.12E-08	6.76E-04	7.34E-07	4.31E-07	7.24E-02	3.29E-01
2023	1.41E-05	1.98E-06	8.69E-07	1.11E-06	3.42E-06	3.44E-07	6.71E-07	4.62E-07	4.04E-07	5.48E-09	6.62E-04	7.19E-07	4.22E-07	6.86E-02	3.12E-01
2024	1.39E-05	1.89E-06	8.42E-07	1.06E-06	3.20E-06	3.18E-07	6.35E-07	4.55E-07	3.73E-07	5.39E-09	6.53E-04	7.10E-07	4.17E-07	6.65E-02	3.00E-01
2025	1.18E-05	1.55E-06	7.01E-07	8.73E-07	2.57E-06	2.52E-07	5.15E-07	3.69E-07	2.95E-07	4.36E-09	5.55E-04	6.03E-07	3.54E-07	2.09E-01	1.01E+00
Maximum	**1.44E-05**	**3.34E-06**	**5.58E-06**	**1.09E-05**	**1.69E-04**	**3.95E-07**	**2.36E-06**	**1.29E-04**	**9.61E-07**	**4.29E-08**	**6.76E-04**	**7.34E-07**	**4.31E-07**	**2.09E-01**	**1.01E+00**

Table D-A1.1-16 Annual Construction HAP Emissions by Year, Alternative 2, Private Development (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2026	3.90E-02	1.21E-03	1.11E-02	1.49E-05	2.13E-02	2.29E-03	4.52E-06	2.10E-07	2.45E-06	7.05E-05	1.81E-06	2.07E-03	1.90E-06	9.89E-02	0.00E+00	7.91E-08	1.02E-05	1.49E-04
2027	5.32E-02	2.34E-03	1.67E-02	2.88E-05	3.40E-02	3.04E-03	8.75E-06	4.07E-07	4.75E-06	9.39E-05	3.50E-06	3.13E-03	3.69E-06	1.35E-01	0.00E+00	1.53E-07	1.97E-05	2.89E-04
2028	1.15E-01	2.22E-03	1.62E-02	2.73E-05	3.33E-02	2.94E-03	8.30E-06	3.86E-07	4.51E-06	8.99E-05	3.32E-06	1.78E-02	3.50E-06	1.43E-01	0.00E+00	1.45E-07	1.87E-05	5.62E-02
2029	1.07E-01	1.84E-03	1.38E-02	2.26E-05	3.20E-02	2.48E-03	6.86E-06	3.19E-07	3.73E-06	7.47E-05	2.75E-06	1.73E-02	2.89E-06	1.25E-01	0.00E+00	1.20E-07	1.54E-05	5.62E-02
2030	1.12E-01	1.83E-03	1.48E-02	2.26E-05	2.98E-02	2.79E-03	6.86E-06	3.19E-07	3.72E-06	8.50E-05	2.74E-06	1.75E-02	2.89E-06	1.36E-01	0.00E+00	1.20E-07	1.54E-05	5.62E-02
2031	1.09E-01	1.84E-03	1.41E-02	2.26E-05	2.91E-02	2.58E-03	6.87E-06	3.19E-07	3.73E-06	7.78E-05	2.75E-06	1.74E-02	2.89E-06	1.29E-01	0.00E+00	1.20E-07	1.54E-05	5.62E-02
2032	1.09E-01	1.72E-03	1.38E-02	2.11E-05	2.86E-02	2.50E-03	6.43E-06	2.99E-07	3.49E-06	7.43E-05	2.57E-06	1.73E-02	2.71E-06	1.29E-01	0.00E+00	1.12E-07	1.45E-05	5.62E-02
2033	1.08E-01	1.60E-03	1.33E-02	1.96E-05	2.79E-02	2.41E-03	5.97E-06	2.78E-07	3.24E-06	7.04E-05	2.39E-06	1.72E-02	2.52E-06	1.28E-01	0.00E+00	1.04E-07	1.34E-05	5.61E-02
2034	1.03E-01	1.35E-03	1.16E-02	1.66E-05	2.81E-02	2.10E-03	5.05E-06	2.35E-07	2.74E-06	6.04E-05	2.02E-06	1.69E-02	2.13E-06	1.15E-01	0.00E+00	8.83E-08	1.14E-05	5.61E-02
2035	1.12E-01	1.14E-03	1.31E-02	1.40E-05	2.64E-02	2.63E-03	4.26E-06	1.98E-07	2.31E-06	7.56E-05	1.71E-06	1.72E-02	1.79E-06	1.39E-01	0.00E+00	7.45E-08	9.59E-06	5.61E-02
2036	1.08E-01	1.44E-03	1.28E-02	1.77E-05	2.72E-02	2.32E-03	5.40E-06	2.51E-07	2.93E-06	6.61E-05	2.16E-06	1.72E-02	2.27E-06	1.28E-01	0.00E+00	9.44E-08	1.21E-05	5.61E-02
2037	1.07E-01	1.43E-03	1.26E-02	1.76E-05	2.65E-02	2.28E-03	5.35E-06	2.49E-07	2.91E-06	6.54E-05	2.14E-06	1.71E-02	2.25E-06	1.25E-01	0.00E+00	9.36E-08	1.20E-05	5.61E-02
2038	1.07E-01	1.43E-03	1.26E-02	1.76E-05	2.65E-02	2.28E-03	5.35E-06	2.49E-07	2.91E-06	6.54E-05	2.14E-06	1.71E-02	2.25E-06	1.25E-01	0.00E+00	9.36E-08	1.20E-05	5.61E-02
2039	1.06E-01	1.43E-03	1.25E-02	1.75E-05	2.64E-02	2.27E-03	5.33E-06	2.48E-07	2.90E-06	6.52E-05	2.13E-06	1.71E-02	2.25E-06	1.24E-01	0.00E+00	9.33E-08	1.20E-05	5.61E-02
2040	1.06E-01	1.14E-03	1.16E-02	1.40E-05	2.50E-02	2.08E-03	4.25E-06	1.97E-07	2.31E-06	5.66E-05	1.70E-06	1.70E-02	1.79E-06	1.23E-01	0.00E+00	7.43E-08	9.55E-06	5.61E-02
2041	1.06E-01	1.14E-03	1.16E-02	1.40E-05	2.50E-02	2.08E-03	4.25E-06	1.97E-07	2.31E-06	5.66E-05	1.70E-06	1.70E-02	1.79E-06	1.23E-01	0.00E+00	7.43E-08	9.55E-06	5.61E-02
2042	1.06E-01	1.14E-03	1.16E-02	1.40E-05	2.50E-02	2.08E-03	4.25E-06	1.97E-07	2.31E-06	5.66E-05	1.70E-06	1.70E-02	1.79E-06	1.23E-01	0.00E+00	7.43E-08	9.55E-06	5.61E-02
2043	1.06E-01	1.14E-03	1.16E-02	1.40E-05	2.50E-02	2.08E-03	4.25E-06	1.97E-07	2.31E-06	5.66E-05	1.70E-06	1.70E-02	1.79E-06	1.23E-01	0.00E+00	7.43E-08	9.55E-06	5.61E-02
2044	1.06E-01	1.14E-03	1.16E-02	1.40E-05	2.50E-02	2.08E-03	4.25E-06	1.97E-07	2.31E-06	5.66E-05	1.70E-06	1.70E-02	1.79E-06	1.23E-01	0.00E+00	7.43E-08	9.55E-06	5.61E-02
2045	1.05E-01	1.01E-03	1.11E-02	1.24E-05	2.43E-02	1.99E-03	3.77E-06	1.75E-07	2.05E-06	5.26E-05	1.51E-06	1.69E-02	1.59E-06	1.23E-01	0.00E+00	6.60E-08	8.48E-06	5.61E-02
2046	1.05E-01	1.01E-03	1.11E-02	1.25E-05	2.44E-02	1.99E-03	3.79E-06	1.76E-07	2.06E-06	5.28E-05	1.52E-06	1.69E-02	1.59E-06	1.23E-01	0.00E+00	6.63E-08	8.52E-06	5.61E-02
2047	1.05E-01	1.01E-03	1.11E-02	1.25E-05	2.44E-02	1.99E-03	3.79E-06	1.76E-07	2.06E-06	5.28E-05	1.52E-06	1.69E-02	1.59E-06	1.23E-01	0.00E+00	6.63E-08	8.52E-06	5.61E-02
2048	1.06E-01	1.02E-03	1.12E-02	1.25E-05	2.44E-02	2.00E-03	3.80E-06	1.77E-07	2.06E-06	5.30E-05	1.52E-06	1.69E-02	1.60E-06	1.23E-01	0.00E+00	6.65E-08	8.55E-06	5.61E-02
2049	9.28E-02	7.29E-04	7.93E-03	8.97E-06	2.09E-02	1.41E-03	2.73E-06	1.27E-07	1.48E-06	3.72E-05	1.09E-06	1.63E-02	1.15E-06	8.99E-02	0.00E+00	4.77E-08	6.13E-06	5.60E-02
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**1.15E-01**	**2.34E-03**	**1.67E-02**	**2.88E-05**	**3.40E-02**	**3.04E-03**	**8.75E-06**	**4.07E-07**	**4.75E-06**	**9.39E-05**	**3.50E-06**	**1.78E-02**	**3.69E-06**	**1.43E-01**	**0.00E+00**	**1.53E-07**	**1.97E-05**	**5.62E-02**

Table D-A1.1-16 Annual Construction HAP Emissions by Year, Alternative 2, Private Development (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2026	0.00E+00	1.32E-05	1.37E-04	1.35E-03	1.52E-06	6.84E-03	4.27E-04	1.67E-02	0.00E+00	0.00E+00	1.18E-02	0.00E+00	5.86E-03	7.95E-04	3.84E-07	7.30E-05	6.03E-06	2.07E-06
2027	0.00E+00	2.56E-05	2.65E-04	1.58E-03	2.95E-06	9.52E-03	7.52E-04	2.76E-02	0.00E+00	0.00E+00	2.12E-02	0.00E+00	9.28E-03	1.17E-03	7.45E-07	7.82E-06	4.19E-07	2.76E-06
2028	0.00E+00	2.43E-05	2.52E-04	1.52E-03	2.79E-06	1.83E-02	7.15E-04	1.03E-01	0.00E+00	0.00E+00	3.21E-02	0.00E+00	7.09E-02	2.46E-02	7.06E-07	7.54E-06	3.96E-07	2.70E-06
2029	0.00E+00	2.01E-05	2.08E-04	4.54E-03	2.31E-06	1.70E-02	5.91E-04	9.94E-02	0.00E+00	0.00E+00	2.87E-02	0.00E+00	6.95E-02	2.44E-02	5.84E-07	6.36E-06	3.29E-07	2.30E-06
2030	0.00E+00	2.00E-05	2.08E-04	1.52E-03	2.31E-06	1.77E-02	6.09E-04	1.00E-01	0.00E+00	0.00E+00	2.91E-02	0.00E+00	6.99E-02	2.45E-02	5.83E-07	8.92E-06	5.88E-07	2.20E-06
2031	0.00E+00	2.01E-05	2.08E-04	1.34E-03	2.31E-06	1.73E-02	5.97E-04	9.98E-02	0.00E+00	0.00E+00	2.89E-02	0.00E+00	6.97E-02	2.44E-02	5.84E-07	5.57E-06	3.06E-07	2.02E-06
2032	0.00E+00	1.88E-05	1.95E-04	1.29E-03	2.16E-06	1.73E-02	5.61E-04	9.93E-02	0.00E+00	0.00E+00	2.80E-02	0.00E+00	6.95E-02	2.44E-02	5.47E-07	5.42E-06	2.93E-07	1.99E-06
2033	0.00E+00	1.75E-05	1.81E-04	1.23E-03	2.01E-06	1.72E-02	5.24E-04	9.85E-02	0.00E+00	0.00E+00	2.71E-02	0.00E+00	6.93E-02	2.43E-02	5.08E-07	5.22E-06	2.77E-07	1.95E-06
2034	0.00E+00	1.48E-05	1.53E-04	4.34E-03	1.70E-06	1.63E-02	4.45E-04	9.58E-02	0.00E+00	0.00E+00	2.49E-02	0.00E+00	6.83E-02	2.42E-02	4.30E-07	4.55E-06	2.37E-07	1.71E-06
2035	0.00E+00	1.25E-05	1.29E-04	1.50E-03	1.43E-06	1.79E-02	4.18E-04	9.66E-02	0.00E+00	0.00E+00	2.40E-02	0.00E+00	6.88E-02	2.43E-02	3.62E-07	1.34E-05	9.92E-07	2.10E-06
2036	0.00E+00	1.58E-05	1.64E-04	1.17E-03	1.82E-06	1.73E-02	4.78E-04	9.78E-02	0.00E+00	0.00E+00	2.59E-02	0.00E+00	6.90E-02	2.43E-02	4.59E-07	4.63E-06	2.47E-07	1.76E-06
2037	0.00E+00	1.56E-05	1.62E-04	1.16E-03	1.80E-06	1.70E-02	4.74E-04	9.72E-02	0.00E+00	0.00E+00	2.57E-02	0.00E+00	6.88E-02	2.43E-02	4.55E-07	4.49E-06	2.42E-07	1.70E-06
2038	0.00E+00	1.56E-05	1.62E-04	1.16E-03	1.80E-06	1.70E-02	4.74E-04	9.72E-02	0.00E+00	0.00E+00	2.57E-02	0.00E+00	6.88E-02	2.43E-02	4.55E-07	4.49E-06	2.42E-07	1.70E-06
2039	0.00E+00	1.56E-05	1.62E-04	1.16E-03	1.79E-06	1.70E-02	4.72E-04	9.72E-02	0.00E+00	0.00E+00	2.57E-02	0.00E+00	6.88E-02	2.43E-02	4.54E-07	4.48E-06	2.41E-07	1.70E-06
2040	0.00E+00	1.24E-05	1.29E-04	1.03E-03	1.43E-06	1.69E-02	3.84E-04	9.56E-02	0.00E+00	0.00E+00	2.35E-02	0.00E+00	6.83E-02	2.42E-02	3.61E-07	3.91E-06	2.01E-07	1.56E-06
2041	0.00E+00	1.24E-05	1.29E-04	1.03E-03	1.43E-06	1.69E-02	3.84E-04	9.56E-02	0.00E+00	0.00E+00	2.35E-02	0.00E+00	6.83E-02	2.42E-02	3.61E-07	3.91E-06	2.01E-07	1.56E-06
2042	0.00E+00	1.24E-05	1.29E-04	1.03E-03	1.43E-06	1.69E-02	3.84E-04	9.56E-02	0.00E+00	0.00E+00	2.35E-02	0.00E+00	6.83E-02	2.42E-02	3.61E-07	3.91E-06	2.01E-07	1.56E-06
2043	0.00E+00	1.24E-05	1.29E-04	1.03E-03	1.43E-06	1.69E-02	3.84E-04	9.56E-02	0.00E+00	0.00E+00	2.35E-02	0.00E+00	6.83E-02	2.42E-02	3.61E-07	3.91E-06	2.01E-07	1.56E-06
2044	0.00E+00	1.24E-05	1.29E-04	1.03E-03	1.43E-06	1.69E-02	3.84E-04	9.56E-02	0.00E+00	0.00E+00	2.35E-02	0.00E+00	6.83E-02	2.42E-02	3.61E-07	3.91E-06	2.01E-07	1.56E-06
2045	0.00E+00	1.10E-05	1.14E-04	9.76E-04	1.27E-06	1.69E-02	3.45E-04	9.49E-02	0.00E+00	0.00E+00	2.25E-02	0.00E+00	6.80E-02	2.41E-02	3.21E-07	3.72E-06	1.85E-07	1.52E-06
2046	0.00E+00	1.11E-05	1.15E-04	9.80E-04	1.27E-06	1.69E-02	3.47E-04	9.50E-02	0.00E+00	0.00E+00	2.26E-02	0.00E+00	6.81E-02	2.41E-02	3.22E-07	3.73E-06	1.86E-07	1.52E-06
2047	0.00E+00	1.11E-05	1.15E-04	9.80E-04	1.27E-06	1.69E-02	3.47E-04	9.50E-02	0.00E+00	0.00E+00	2.26E-02	0.00E+00	6.81E-02	2.41E-02	3.22E-07	3.73E-06	1.86E-07	1.52E-06
2048	0.00E+00	1.11E-05	1.15E-04	9.84E-04	1.28E-06	1.70E-02	3.48E-04	9.51E-02	0.00E+00	0.00E+00	2.26E-02	0.00E+00	6.81E-02	2.41E-02	3.23E-07	3.75E-06	1.87E-07	1.53E-06
2049	0.00E+00	7.97E-06	8.26E-05	3.96E-03	9.17E-07	1.46E-02	2.48E-04	8.97E-02	0.00E+00	0.00E+00	1.95E-02	0.00E+00	6.63E-02	2.39E-02	2.32E-07	2.70E-06	1.34E-07	1.09E-06
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**0.00E+00**	**2.56E-05**	**2.65E-04**	**4.54E-03**	**2.95E-06**	**1.83E-02**	**7.52E-04**	**1.03E-01**	**0.00E+00**	**0.00E+00**	**3.21E-02**	**0.00E+00**	**7.09E-02**	**2.46E-02**	**7.45E-07**	**7.30E-05**	**6.03E-06**	**2.76E-06**

Table D-A1.1-16 Annual Construction HAP Emissions by Year, Alternative 2, Private Development (tons per year), Continued

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene/fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2026	2.76E-06	9.66E-06	2.84E-05	5.77E-05	9.75E-04	3.22E-07	1.01E-05	7.40E-04	3.28E-06	5.22E-08	1.30E-04	1.41E-07	8.27E-08	9.89E-02	2.22E-01
2027	5.28E-06	1.62E-06	5.76E-07	1.01E-06	3.78E-06	4.62E-07	6.97E-07	2.58E-06	5.45E-07	3.06E-08	2.49E-04	2.70E-07	1.59E-07	1.35E-01	3.20E-01
2028	4.87E-06	1.59E-06	5.56E-07	9.81E-07	3.74E-06	4.59E-07	6.86E-07	2.52E-06	5.42E-07	2.99E-08	2.29E-04	2.49E-07	1.46E-07	1.43E-01	6.39E-01
2029	3.95E-06	1.36E-06	4.69E-07	8.35E-07	3.23E-06	3.97E-07	5.89E-07	2.11E-06	4.69E-07	2.50E-08	1.86E-04	2.02E-07	1.19E-07	1.25E-01	6.00E-01
2030	3.90E-06	1.58E-06	1.77E-06	3.54E-06	4.91E-05	3.46E-07	9.92E-07	3.85E-05	5.49E-07	4.03E-08	1.84E-04	2.00E-07	1.17E-07	1.36E-01	6.15E-01
2031	3.92E-06	1.14E-06	4.18E-07	7.43E-07	2.62E-06	3.25E-07	4.98E-07	2.38E-06	3.85E-07	2.82E-08	1.85E-04	2.01E-07	1.18E-07	1.29E-01	6.02E-01
2032	3.66E-06	1.12E-06	4.07E-07	7.32E-07	2.62E-06	3.26E-07	4.95E-07	2.35E-06	3.86E-07	2.78E-08	1.72E-04	1.87E-07	1.10E-07	1.29E-01	5.99E-01
2033	3.39E-06	1.10E-06	3.93E-07	7.15E-07	2.59E-06	3.23E-07	4.86E-07	2.30E-06	3.82E-07	2.72E-08	1.60E-04	1.73E-07	1.02E-07	1.28E-01	5.94E-01
2034	2.84E-06	9.68E-07	3.42E-07	6.28E-07	2.31E-06	2.89E-07	4.31E-07	2.01E-06	3.42E-07	2.38E-08	1.34E-04	1.45E-07	8.53E-08	1.15E-01	5.69E-01
2035	2.38E-06	2.12E-06	4.07E-06	8.33E-06	1.31E-04	3.33E-07	1.78E-06	1.02E-04	7.80E-07	5.65E-08	1.12E-04	1.22E-07	7.15E-08	1.39E-01	6.01E-01
2036	3.01E-06	9.71E-07	3.51E-07	6.49E-07	2.30E-06	2.89E-07	4.36E-07	2.28E-06	3.42E-07	2.70E-08	1.42E-04	1.54E-07	9.03E-08	1.28E-01	5.90E-01
2037	2.98E-06	9.36E-07	3.41E-07	6.29E-07	2.20E-06	2.77E-07	4.20E-07	2.25E-06	3.29E-07	2.67E-08	1.40E-04	1.52E-07	8.94E-08	1.25E-01	5.82E-01
2038	2.98E-06	9.36E-07	3.41E-07	6.29E-07	2.20E-06	2.77E-07	4.20E-07	2.25E-06	3.29E-07	2.67E-08	1.40E-04	1.52E-07	8.94E-08	1.25E-01	5.82E-01
2039	2.97E-06	9.34E-07	3.40E-07	6.27E-07	2.20E-06	2.77E-07	4.19E-07	2.25E-06	3.28E-07	2.66E-08	1.40E-04	1.52E-07	8.91E-08	1.24E-01	5.81E-01
2040	2.30E-06	8.48E-07	3.01E-07	5.76E-07	2.06E-06	2.63E-07	3.90E-07	2.18E-06	3.11E-07	2.58E-08	1.08E-04	1.18E-07	6.91E-08	1.23E-01	5.72E-01
2041	2.30E-06	8.48E-07	3.01E-07	5.76E-07	2.06E-06	2.63E-07	3.90E-07	2.18E-06	3.11E-07	2.58E-08	1.08E-04	1.18E-07	6.91E-08	1.23E-01	5.72E-01
2042	2.30E-06	8.48E-07	3.01E-07	5.76E-07	2.06E-06	2.63E-07	3.90E-07	2.18E-06	3.11E-07	2.58E-08	1.08E-04	1.18E-07	6.91E-08	1.23E-01	5.72E-01
2043	2.30E-06	8.48E-07	3.01E-07	5.76E-07	2.06E-06	2.63E-07	3.90E-07	2.18E-06	3.11E-07	2.58E-08	1.08E-04	1.18E-07	6.91E-08	1.23E-01	5.72E-01
2044	2.30E-06	8.48E-07	3.01E-07	5.76E-07	2.06E-06	2.63E-07	3.90E-07	2.18E-06	3.11E-07	2.58E-08	1.08E-04	1.18E-07	6.91E-08	1.23E-01	5.72E-01
2045	2.02E-06	8.26E-07	2.87E-07	5.61E-07	2.04E-06	2.61E-07	3.84E-07	2.15E-06	3.10E-07	2.54E-08	9.53E-05	1.03E-07	6.08E-08	1.23E-01	5.67E-01
2046	2.02E-06	8.28E-07	2.88E-07	5.63E-07	2.04E-06	2.62E-07	3.85E-07	2.15E-06	3.11E-07	2.55E-08	9.53E-05	1.03E-07	6.08E-08	1.23E-01	5.68E-01
2047	2.02E-06	8.28E-07	2.88E-07	5.63E-07	2.04E-06	2.62E-07	3.85E-07	2.15E-06	3.11E-07	2.55E-08	9.53E-05	1.03E-07	6.08E-08	1.23E-01	5.68E-01
2048	2.03E-06	8.33E-07	2.90E-07	5.66E-07	2.05E-06	2.64E-07	3.87E-07	2.16E-06	3.12E-07	2.56E-08	9.57E-05	1.04E-07	6.10E-08	1.23E-01	5.69E-01
2049	1.47E-06	6.00E-07	2.07E-07	4.02E-07	1.48E-06	1.89E-07	2.77E-07	1.47E-06	2.24E-07	1.75E-08	6.90E-05	7.49E-08	4.40E-08	9.28E-02	5.04E-01
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**5.28E-06**	**9.66E-06**	**2.84E-05**	**5.77E-05**	**9.75E-04**	**4.62E-07**	**1.01E-05**	**7.40E-04**	**3.28E-06**	**5.65E-08**	**2.49E-04**	**2.70E-07**	**1.59E-07**	**1.43E-01**	**6.39E-01**

Table D-A1.1-17 Annual Construction HAP Emissions by Year, Alternative 3, Private Development (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2026	3.02E-02	8.17E-04	8.37E-03	1.00E-05	1.56E-02	1.80E-03	3.05E-06	1.42E-07	1.66E-06	5.55E-05	1.22E-06	1.55E-03	1.29E-06	7.65E-02	0.00E+00	5.34E-08	6.87E-06	1.01E-04
2027	3.58E-02	1.55E-03	1.12E-02	1.91E-05	2.27E-02	2.06E-03	5.81E-06	2.70E-07	3.16E-06	6.38E-05	2.33E-06	2.10E-03	2.45E-06	9.11E-02	0.00E+00	1.02E-07	1.31E-05	1.92E-04
2028	7.67E-02	1.47E-03	1.09E-02	1.81E-05	2.22E-02	1.99E-03	5.51E-06	2.56E-07	2.99E-06	6.11E-05	2.21E-06	1.19E-02	2.32E-06	9.62E-02	0.00E+00	9.64E-08	1.24E-05	3.75E-02
2029	7.19E-02	1.22E-03	9.25E-03	1.50E-05	2.35E-02	1.68E-03	4.56E-06	2.12E-07	2.48E-06	5.08E-05	1.82E-06	1.16E-02	1.92E-06	8.42E-02	0.00E+00	7.97E-08	1.03E-05	3.75E-02
2030	7.65E-02	1.22E-03	1.03E-02	1.50E-05	2.05E-02	2.00E-03	4.57E-06	2.13E-07	2.48E-06	6.08E-05	1.83E-06	1.17E-02	1.93E-06	9.56E-02	0.00E+00	8.00E-08	1.03E-05	3.75E-02
2031	7.30E-02	1.22E-03	9.50E-03	1.50E-05	1.94E-02	1.75E-03	4.56E-06	2.12E-07	2.47E-06	5.30E-05	1.82E-06	1.16E-02	1.92E-06	8.70E-02	0.00E+00	7.97E-08	1.03E-05	3.75E-02
2032	7.29E-02	1.14E-03	9.26E-03	1.40E-05	1.91E-02	1.70E-03	4.27E-06	1.98E-07	2.32E-06	5.06E-05	1.71E-06	1.16E-02	1.80E-06	8.71E-02	0.00E+00	7.46E-08	9.60E-06	3.75E-02
2033	7.25E-02	1.06E-03	8.95E-03	1.30E-05	1.86E-02	1.64E-03	3.97E-06	1.84E-07	2.15E-06	4.81E-05	1.59E-06	1.15E-02	1.67E-06	8.62E-02	0.00E+00	6.94E-08	8.92E-06	3.75E-02
2034	6.91E-02	8.97E-04	7.83E-03	1.10E-05	2.09E-02	1.43E-03	3.35E-06	1.56E-07	1.82E-06	4.13E-05	1.34E-06	1.13E-02	1.41E-06	7.77E-02	0.00E+00	5.87E-08	7.54E-06	3.75E-02
2035	8.05E-02	7.71E-04	9.94E-03	9.48E-06	1.96E-02	2.07E-03	2.88E-06	1.34E-07	1.57E-06	5.98E-05	1.15E-06	1.17E-02	1.21E-06	1.07E-01	0.00E+00	5.04E-08	6.49E-06	3.74E-02
2036	7.16E-02	9.55E-04	8.49E-03	1.17E-05	1.78E-02	1.56E-03	3.57E-06	1.66E-07	1.94E-06	4.50E-05	1.43E-06	1.14E-02	1.50E-06	8.43E-02	0.00E+00	6.24E-08	8.03E-06	3.75E-02
2037	7.15E-02	9.51E-04	8.45E-03	1.17E-05	1.77E-02	1.55E-03	3.55E-06	1.65E-07	1.93E-06	4.48E-05	1.42E-06	1.14E-02	1.50E-06	8.38E-02	0.00E+00	6.21E-08	7.99E-06	3.75E-02
2038	7.15E-02	9.51E-04	8.45E-03	1.17E-05	1.77E-02	1.55E-03	3.55E-06	1.65E-07	1.93E-06	4.48E-05	1.42E-06	1.14E-02	1.50E-06	8.38E-02	0.00E+00	6.21E-08	7.99E-06	3.75E-02
2039	7.14E-02	9.47E-04	8.41E-03	1.16E-05	1.76E-02	1.55E-03	3.54E-06	1.65E-07	1.92E-06	4.46E-05	1.42E-06	1.14E-02	1.49E-06	8.35E-02	0.00E+00	6.19E-08	7.96E-06	3.75E-02
2040	7.09E-02	7.54E-04	7.78E-03	9.27E-06	1.67E-02	1.42E-03	2.82E-06	1.31E-07	1.53E-06	3.89E-05	1.13E-06	1.13E-02	1.19E-06	8.30E-02	0.00E+00	4.93E-08	6.34E-06	3.74E-02
2041	7.09E-02	7.54E-04	7.78E-03	9.27E-06	1.67E-02	1.42E-03	2.82E-06	1.31E-07	1.53E-06	3.89E-05	1.13E-06	1.13E-02	1.19E-06	8.30E-02	0.00E+00	4.93E-08	6.34E-06	3.74E-02
2042	7.09E-02	7.54E-04	7.78E-03	9.27E-06	1.67E-02	1.42E-03	2.82E-06	1.31E-07	1.53E-06	3.89E-05	1.13E-06	1.13E-02	1.19E-06	8.30E-02	0.00E+00	4.93E-08	6.34E-06	3.74E-02
2043	7.09E-02	7.54E-04	7.78E-03	9.27E-06	1.67E-02	1.42E-03	2.82E-06	1.31E-07	1.53E-06	3.89E-05	1.13E-06	1.13E-02	1.19E-06	8.30E-02	0.00E+00	4.93E-08	6.34E-06	3.74E-02
2044	7.09E-02	7.54E-04	7.78E-03	9.27E-06	1.67E-02	1.42E-03	2.82E-06	1.31E-07	1.53E-06	3.89E-05	1.13E-06	1.13E-02	1.19E-06	8.30E-02	0.00E+00	4.93E-08	6.34E-06	3.74E-02
2045	7.05E-02	6.70E-04	7.47E-03	8.24E-06	1.62E-02	1.36E-03	2.51E-06	1.17E-07	1.36E-06	3.62E-05	1.00E-06	1.13E-02	1.05E-06	8.24E-02	0.00E+00	4.38E-08	5.64E-06	3.74E-02
2046	7.07E-02	6.72E-04	7.50E-03	8.27E-06	1.63E-02	1.36E-03	2.51E-06	1.17E-07	1.36E-06	3.64E-05	1.01E-06	1.13E-02	1.06E-06	8.27E-02	0.00E+00	4.40E-08	5.65E-06	3.74E-02
2047	7.07E-02	6.72E-04	7.50E-03	8.27E-06	1.63E-02	1.36E-03	2.51E-06	1.17E-07	1.36E-06	3.64E-05	1.01E-06	1.13E-02	1.06E-06	8.27E-02	0.00E+00	4.40E-08	5.65E-06	3.74E-02
2048	7.08E-02	6.75E-04	7.53E-03	8.30E-06	1.63E-02	1.37E-03	2.52E-06	1.17E-07	1.37E-06	3.65E-05	1.01E-06	1.13E-02	1.06E-06	8.30E-02	0.00E+00	4.42E-08	5.68E-06	3.74E-02
2049	6.23E-02	4.85E-04	5.37E-03	5.96E-06	1.62E-02	9.66E-04	1.81E-06	8.43E-08	9.85E-07	2.56E-05	7.26E-07	1.09E-02	7.64E-07	6.10E-02	0.00E+00	3.17E-08	4.08E-06	3.74E-02
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**8.05E-02**	**1.55E-03**	**1.12E-02**	**1.91E-05**	**2.35E-02**	**2.07E-03**	**5.81E-06**	**2.70E-07**	**3.16E-06**	**6.38E-05**	**2.33E-06**	**1.19E-02**	**2.45E-06**	**1.07E-01**	**0.00E+00**	**1.02E-07**	**1.31E-05**	**3.75E-02**

Table D-A1.1-17 Annual Construction HAP Emissions by Year, Alternative 3, Private Development (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2026	0.00E+00	8.92E-06	9.26E-05	1.11E-03	1.03E-06	5.25E-03	3.02E-04	1.21E-02	0.00E+00	0.00E+00	8.29E-03	0.00E+00	4.32E-03	6.05E-04	2.60E-07	7.17E-05	5.96E-06	1.61E-06
2027	0.00E+00	1.70E-05	1.76E-04	1.08E-03	1.96E-06	6.39E-03	5.02E-04	1.84E-02	0.00E+00	0.00E+00	1.41E-02	0.00E+00	6.20E-03	7.90E-04	4.94E-07	5.21E-06	2.79E-07	1.86E-06
2028	0.00E+00	1.61E-05	1.67E-04	1.04E-03	1.86E-06	1.22E-02	4.77E-04	6.90E-02	0.00E+00	0.00E+00	2.14E-02	0.00E+00	4.73E-02	1.64E-02	4.69E-07	5.02E-06	2.64E-07	1.82E-06
2029	0.00E+00	1.33E-05	1.38E-04	4.98E-03	1.53E-06	1.14E-02	3.95E-04	6.64E-02	0.00E+00	0.00E+00	1.91E-02	0.00E+00	4.64E-02	1.63E-02	3.88E-07	4.25E-06	2.19E-07	1.55E-06
2030	0.00E+00	1.34E-05	1.39E-04	1.11E-03	1.54E-06	1.21E-02	4.13E-04	6.73E-02	0.00E+00	0.00E+00	1.95E-02	0.00E+00	4.69E-02	1.64E-02	3.89E-07	7.12E-06	4.88E-07	1.57E-06
2031	0.00E+00	1.33E-05	1.38E-04	9.22E-04	1.53E-06	1.16E-02	3.99E-04	6.66E-02	0.00E+00	0.00E+00	1.92E-02	0.00E+00	4.65E-02	1.63E-02	3.88E-07	3.71E-06	2.04E-07	1.36E-06
2032	0.00E+00	1.25E-05	1.29E-04	8.88E-04	1.44E-06	1.16E-02	3.75E-04	6.62E-02	0.00E+00	0.00E+00	1.87E-02	0.00E+00	4.64E-02	1.63E-02	3.63E-07	3.61E-06	1.95E-07	1.35E-06
2033	0.00E+00	1.16E-05	1.20E-04	8.50E-04	1.33E-06	1.15E-02	3.50E-04	6.57E-02	0.00E+00	0.00E+00	1.80E-02	0.00E+00	4.62E-02	1.63E-02	3.37E-07	3.47E-06	1.85E-07	1.31E-06
2034	0.00E+00	9.80E-06	1.02E-04	4.85E-03	1.13E-06	1.09E-02	2.97E-04	6.39E-02	0.00E+00	0.00E+00	1.66E-02	0.00E+00	4.56E-02	1.62E-02	2.85E-07	3.04E-06	1.59E-07	1.16E-06
2035	0.00E+00	8.43E-06	8.74E-05	1.22E-03	9.70E-07	1.29E-02	2.98E-04	6.58E-02	0.00E+00	0.00E+00	1.65E-02	0.00E+00	4.65E-02	1.63E-02	2.45E-07	1.23E-05	9.30E-07	1.68E-06
2036	0.00E+00	1.04E-05	1.08E-04	8.07E-04	1.20E-06	1.14E-02	3.18E-04	6.50E-02	0.00E+00	0.00E+00	1.72E-02	0.00E+00	4.60E-02	1.62E-02	3.03E-07	3.01E-06	1.62E-07	1.16E-06
2037	0.00E+00	1.04E-05	1.08E-04	8.03E-04	1.20E-06	1.14E-02	3.17E-04	6.49E-02	0.00E+00	0.00E+00	1.72E-02	0.00E+00	4.60E-02	1.62E-02	3.02E-07	2.99E-06	1.61E-07	1.15E-06
2038	0.00E+00	1.04E-05	1.08E-04	8.03E-04	1.20E-06	1.14E-02	3.17E-04	6.49E-02	0.00E+00	0.00E+00	1.72E-02	0.00E+00	4.60E-02	1.62E-02	3.02E-07	2.99E-06	1.61E-07	1.15E-06
2039	0.00E+00	1.03E-05	1.07E-04	8.00E-04	1.19E-06	1.14E-02	3.16E-04	6.48E-02	0.00E+00	0.00E+00	1.71E-02	0.00E+00	4.59E-02	1.62E-02	3.01E-07	2.99E-06	1.61E-07	1.15E-06
2040	0.00E+00	8.24E-06	8.54E-05	7.19E-04	9.49E-07	1.13E-02	2.57E-04	6.38E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	4.56E-02	1.61E-02	2.40E-07	2.61E-06	1.34E-07	1.06E-06
2041	0.00E+00	8.24E-06	8.54E-05	7.19E-04	9.49E-07	1.13E-02	2.57E-04	6.38E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	4.56E-02	1.61E-02	2.40E-07	2.61E-06	1.34E-07	1.06E-06
2042	0.00E+00	8.24E-06	8.54E-05	7.19E-04	9.49E-07	1.13E-02	2.57E-04	6.38E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	4.56E-02	1.61E-02	2.40E-07	2.61E-06	1.34E-07	1.06E-06
2043	0.00E+00	8.24E-06	8.54E-05	7.19E-04	9.49E-07	1.13E-02	2.57E-04	6.38E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	4.56E-02	1.61E-02	2.40E-07	2.61E-06	1.34E-07	1.06E-06
2044	0.00E+00	8.24E-06	8.54E-05	7.19E-04	9.49E-07	1.13E-02	2.57E-04	6.38E-02	0.00E+00	0.00E+00	1.57E-02	0.00E+00	4.56E-02	1.61E-02	2.40E-07	2.61E-06	1.34E-07	1.06E-06
2045	0.00E+00	7.32E-06	7.59E-05	6.80E-04	8.43E-07	1.13E-02	2.32E-04	6.33E-02	0.00E+00	0.00E+00	1.50E-02	0.00E+00	4.54E-02	1.61E-02	2.13E-07	2.47E-06	1.23E-07	1.03E-06
2046	0.00E+00	7.34E-06	7.62E-05	6.83E-04	8.46E-07	1.13E-02	2.32E-04	6.34E-02	0.00E+00	0.00E+00	1.51E-02	0.00E+00	4.54E-02	1.61E-02	2.14E-07	2.49E-06	1.24E-07	1.03E-06
2047	0.00E+00	7.34E-06	7.62E-05	6.83E-04	8.46E-07	1.13E-02	2.32E-04	6.34E-02	0.00E+00	0.00E+00	1.51E-02	0.00E+00	4.54E-02	1.61E-02	2.14E-07	2.49E-06	1.24E-07	1.03E-06
2048	0.00E+00	7.38E-06	7.65E-05	6.86E-04	8.49E-07	1.14E-02	2.33E-04	6.34E-02	0.00E+00	0.00E+00	1.51E-02	0.00E+00	4.55E-02	1.61E-02	2.15E-07	2.49E-06	1.24E-07	1.03E-06
2049	0.00E+00	5.30E-06	5.50E-05	4.59E-03	6.10E-07	9.79E-03	1.67E-04	6.00E-02	0.00E+00	0.00E+00	1.31E-02	0.00E+00	4.43E-02	1.60E-02	1.54E-07	1.81E-06	8.99E-08	7.44E-07
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**0.00E+00**	**1.70E-05**	**1.76E-04**	**4.98E-03**	**1.96E-06**	**1.29E-02**	**5.02E-04**	**6.90E-02**	**0.00E+00**	**0.00E+00**	**2.14E-02**	**0.00E+00**	**4.73E-02**	**1.64E-02**	**4.94E-07**	**7.17E-05**	**5.96E-06**	**1.86E-06**

Table D-A1.1-17 Annual Construction HAP Emissions by Year, Alternative 3, Private Development (tons per year), Continued

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene/fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2026	1.86E-06	9.39E-06	2.83E-05	5.75E-05	9.74E-04	2.45E-07	1.00E-05	7.40E-04	3.19E-06	4.78E-08	8.76E-05	9.51E-08	5.58E-08	7.65E-02	1.69E-01
2027	3.51E-06	1.08E-06	3.85E-07	6.78E-07	2.52E-06	3.09E-07	4.67E-07	1.86E-06	3.65E-07	2.20E-08	1.65E-04	1.79E-07	1.05E-07	9.11E-02	2.15E-01
2028	3.23E-06	1.06E-06	3.72E-07	6.63E-07	2.50E-06	3.08E-07	4.61E-07	1.81E-06	3.64E-07	2.15E-08	1.52E-04	1.65E-07	9.69E-08	9.62E-02	4.27E-01
2029	2.63E-06	9.06E-07	3.15E-07	5.64E-07	2.16E-06	2.67E-07	3.96E-07	1.52E-06	3.15E-07	1.80E-08	1.24E-04	1.35E-07	7.90E-08	8.42E-02	4.06E-01
2030	2.60E-06	1.21E-06	1.64E-06	3.31E-06	4.83E-05	2.45E-07	8.37E-07	3.79E-05	4.30E-07	3.29E-08	1.22E-04	1.33E-07	7.81E-08	9.56E-02	4.20E-01
2031	2.60E-06	7.56E-07	2.79E-07	5.02E-07	1.75E-06	2.18E-07	3.34E-07	1.71E-06	2.58E-07	2.02E-08	1.22E-04	1.33E-07	7.81E-08	8.70E-02	4.03E-01
2032	2.44E-06	7.49E-07	2.73E-07	4.96E-07	1.75E-06	2.19E-07	3.33E-07	1.69E-06	2.59E-07	2.00E-08	1.15E-04	1.25E-07	7.32E-08	8.71E-02	4.01E-01
2033	2.26E-06	7.30E-07	2.63E-07	4.83E-07	1.72E-06	2.17E-07	3.26E-07	1.65E-06	2.56E-07	1.96E-08	1.06E-04	1.15E-07	6.77E-08	8.62E-02	3.97E-01
2034	1.89E-06	6.47E-07	2.30E-07	4.26E-07	1.55E-06	1.94E-07	2.91E-07	1.45E-06	2.30E-07	1.71E-08	8.89E-05	9.66E-08	5.67E-08	7.77E-02	3.85E-01
2035	1.61E-06	1.88E-06	3.98E-06	8.18E-06	1.30E-04	2.63E-07	1.67E-06	1.02E-04	6.98E-07	5.08E-08	7.58E-05	8.23E-08	4.83E-08	1.07E-01	4.29E-01
2036	1.99E-06	6.29E-07	2.31E-07	4.30E-07	1.48E-06	1.88E-07	2.85E-07	1.63E-06	2.23E-07	1.93E-08	9.35E-05	1.02E-07	5.96E-08	8.43E-02	3.91E-01
2037	1.98E-06	6.25E-07	2.29E-07	4.27E-07	1.47E-06	1.87E-07	2.83E-07	1.62E-06	2.21E-07	1.92E-08	9.30E-05	1.01E-07	5.93E-08	8.38E-02	3.90E-01
2038	1.98E-06	6.25E-07	2.29E-07	4.27E-07	1.47E-06	1.87E-07	2.83E-07	1.62E-06	2.21E-07	1.92E-08	9.30E-05	1.01E-07	5.93E-08	8.38E-02	3.90E-01
2039	1.98E-06	6.23E-07	2.29E-07	4.26E-07	1.47E-06	1.86E-07	2.82E-07	1.61E-06	2.20E-07	1.91E-08	9.30E-05	1.01E-07	5.93E-08	8.35E-02	3.89E-01
2040	1.53E-06	5.65E-07	2.02E-07	3.92E-07	1.37E-06	1.76E-07	2.63E-07	1.58E-06	2.09E-07	1.87E-08	7.21E-05	7.83E-08	4.60E-08	8.30E-02	3.83E-01
2041	1.53E-06	5.65E-07	2.02E-07	3.92E-07	1.37E-06	1.76E-07	2.63E-07	1.58E-06	2.09E-07	1.87E-08	7.21E-05	7.83E-08	4.60E-08	8.30E-02	3.83E-01
2042	1.53E-06	5.65E-07	2.02E-07	3.92E-07	1.37E-06	1.76E-07	2.63E-07	1.58E-06	2.09E-07	1.87E-08	7.21E-05	7.83E-08	4.60E-08	8.30E-02	3.83E-01
2043	1.53E-06	5.65E-07	2.02E-07	3.92E-07	1.37E-06	1.76E-07	2.63E-07	1.58E-06	2.09E-07	1.87E-08	7.21E-05	7.83E-08	4.60E-08	8.30E-02	3.83E-01
2044	1.53E-06	5.65E-07	2.02E-07	3.92E-07	1.37E-06	1.76E-07	2.63E-07	1.58E-06	2.09E-07	1.87E-08	7.21E-05	7.83E-08	4.60E-08	8.30E-02	3.83E-01
2045	1.34E-06	5.49E-07	1.92E-07	3.80E-07	1.36E-06	1.75E-07	2.58E-07	1.54E-06	2.08E-07	1.82E-08	6.31E-05	6.85E-08	4.02E-08	8.24E-02	3.80E-01
2046	1.35E-06	5.52E-07	1.94E-07	3.82E-07	1.36E-06	1.76E-07	2.59E-07	1.55E-06	2.09E-07	1.83E-08	6.35E-05	6.90E-08	4.05E-08	8.27E-02	3.80E-01
2047	1.35E-06	5.52E-07	1.94E-07	3.82E-07	1.36E-06	1.76E-07	2.59E-07	1.55E-06	2.09E-07	1.83E-08	6.35E-05	6.90E-08	4.05E-08	8.27E-02	3.80E-01
2048	1.35E-06	5.54E-07	1.94E-07	3.84E-07	1.37E-06	1.77E-07	2.60E-07	1.55E-06	2.10E-07	1.84E-08	6.35E-05	6.90E-08	4.05E-08	8.30E-02	3.81E-01
2049	9.74E-07	4.04E-07	1.40E-07	2.75E-07	9.99E-07	1.28E-07	1.88E-07	1.06E-06	1.52E-07	1.26E-08	4.58E-05	4.98E-08	2.92E-08	6.23E-02	3.43E-01
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**3.51E-06**	**9.39E-06**	**2.83E-05**	**5.75E-05**	**9.74E-04**	**3.09E-07**	**1.00E-05**	**7.40E-04**	**3.19E-06**	**5.08E-08**	**1.65E-04**	**1.79E-07**	**1.05E-07**	**1.07E-01**	**4.29E-01**

Table D-A1.1-18 Annual Construction HAP Emissions by Year, Alternative 4, Private Development (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2026	5.67E-02	4.11E-03	2.27E-02	5.06E-05	4.08E-02	4.47E-03	1.54E-05	7.15E-07	8.35E-06	1.59E-04	6.15E-06	3.99E-03	6.47E-06	1.36E-01	0.00E+00	2.69E-07	3.46E-05	5.07E-04
2027	9.14E-02	8.24E-03	4.06E-02	1.01E-04	7.45E-02	7.57E-03	3.08E-05	1.43E-06	1.67E-05	2.76E-04	1.23E-05	7.12E-03	1.30E-05	2.16E-01	0.00E+00	5.39E-07	6.93E-05	1.02E-03
2028	1.81E-01	7.81E-03	3.88E-02	9.60E-05	7.16E-02	7.23E-03	2.92E-05	1.36E-06	1.59E-05	2.62E-04	1.17E-05	2.88E-02	1.23E-05	2.24E-01	0.00E+00	5.11E-07	6.57E-05	8.47E-02
2029	1.68E-01	6.45E-03	3.25E-02	7.93E-05	6.36E-02	6.04E-03	2.41E-05	1.12E-06	1.31E-05	2.17E-04	9.64E-06	2.78E-02	1.01E-05	1.94E-01	0.00E+00	4.22E-07	5.42E-05	8.45E-02
2030	1.73E-01	6.40E-03	3.35E-02	7.87E-05	6.16E-02	6.34E-03	2.39E-05	1.11E-06	1.30E-05	2.27E-04	9.57E-06	2.79E-02	1.01E-05	2.06E-01	0.00E+00	4.18E-07	5.38E-05	8.45E-02
2031	1.71E-01	6.46E-03	3.32E-02	7.94E-05	6.15E-02	6.20E-03	2.41E-05	1.12E-06	1.31E-05	2.22E-04	9.66E-06	2.79E-02	1.02E-05	2.02E-01	0.00E+00	4.22E-07	5.43E-05	8.46E-02
2032	1.70E-01	6.05E-03	3.18E-02	7.43E-05	5.96E-02	5.93E-03	2.26E-05	1.05E-06	1.23E-05	2.10E-04	9.04E-06	2.77E-02	9.51E-06	2.01E-01	0.00E+00	3.95E-07	5.08E-05	8.45E-02
2033	1.69E-01	5.62E-03	3.04E-02	6.91E-05	5.73E-02	5.64E-03	2.10E-05	9.77E-07	1.14E-05	1.97E-04	8.41E-06	2.74E-02	8.84E-06	1.99E-01	0.00E+00	3.67E-07	4.73E-05	8.44E-02
2034	1.60E-01	4.75E-03	2.62E-02	5.83E-05	5.30E-02	4.85E-03	1.77E-05	8.25E-07	9.63E-06	1.68E-04	7.10E-06	2.67E-02	7.47E-06	1.78E-01	0.00E+00	3.10E-07	3.99E-05	8.43E-02
2035	1.59E-01	1.66E-03	1.76E-02	2.04E-05	3.63E-02	3.41E-03	6.19E-06	2.88E-07	3.36E-06	9.72E-05	2.48E-06	2.54E-02	2.61E-06	1.86E-01	0.00E+00	1.08E-07	1.39E-05	8.40E-02
2036	1.64E-01	2.14E-03	1.96E-02	2.63E-05	4.20E-02	3.49E-03	7.99E-06	3.72E-07	4.34E-06	9.74E-05	3.20E-06	2.58E-02	3.37E-06	1.99E-01	0.00E+00	1.40E-07	1.80E-05	8.40E-02
2037	1.59E-01	2.11E-03	1.86E-02	2.59E-05	3.94E-02	3.35E-03	7.88E-06	3.66E-07	4.28E-06	9.55E-05	3.15E-06	2.56E-02	3.32E-06	1.86E-01	0.00E+00	1.38E-07	1.77E-05	8.40E-02
2038	1.59E-01	2.11E-03	1.86E-02	2.59E-05	3.94E-02	3.35E-03	7.88E-06	3.66E-07	4.28E-06	9.55E-05	3.15E-06	2.56E-02	3.32E-06	1.86E-01	0.00E+00	1.38E-07	1.77E-05	8.40E-02
2039	1.59E-01	2.10E-03	1.85E-02	2.58E-05	3.93E-02	3.34E-03	7.85E-06	3.65E-07	4.26E-06	9.51E-05	3.14E-06	2.56E-02	3.30E-06	1.85E-01	0.00E+00	1.37E-07	1.77E-05	8.40E-02
2040	1.58E-01	1.67E-03	1.71E-02	2.05E-05	3.72E-02	3.06E-03	6.25E-06	2.91E-07	3.39E-06	8.24E-05	2.50E-06	2.54E-02	2.63E-06	1.84E-01	0.00E+00	1.09E-07	1.41E-05	8.40E-02
2041	1.58E-01	1.67E-03	1.71E-02	2.05E-05	3.72E-02	3.06E-03	6.25E-06	2.91E-07	3.39E-06	8.24E-05	2.50E-06	2.54E-02	2.63E-06	1.84E-01	0.00E+00	1.09E-07	1.41E-05	8.40E-02
2042	1.58E-01	1.67E-03	1.71E-02	2.05E-05	3.72E-02	3.06E-03	6.25E-06	2.91E-07	3.39E-06	8.24E-05	2.50E-06	2.54E-02	2.63E-06	1.84E-01	0.00E+00	1.09E-07	1.41E-05	8.40E-02
2043	1.58E-01	1.67E-03	1.71E-02	2.05E-05	3.72E-02	3.06E-03	6.25E-06	2.91E-07	3.39E-06	8.24E-05	2.50E-06	2.54E-02	2.63E-06	1.84E-01	0.00E+00	1.09E-07	1.41E-05	8.40E-02
2044	1.58E-01	1.67E-03	1.71E-02	2.05E-05	3.72E-02	3.06E-03	6.25E-06	2.91E-07	3.39E-06	8.24E-05	2.50E-06	2.54E-02	2.63E-06	1.84E-01	0.00E+00	1.09E-07	1.41E-05	8.40E-02
2045	1.57E-01	1.48E-03	1.65E-02	1.83E-05	3.62E-02	2.92E-03	5.55E-06	2.58E-07	3.01E-06	7.67E-05	2.22E-06	2.53E-02	2.34E-06	1.83E-01	0.00E+00	9.71E-08	1.25E-05	8.39E-02
2046	1.58E-01	1.49E-03	1.65E-02	1.83E-05	3.63E-02	2.93E-03	5.57E-06	2.59E-07	3.03E-06	7.70E-05	2.23E-06	2.53E-02	2.35E-06	1.84E-01	0.00E+00	9.75E-08	1.25E-05	8.39E-02
2047	1.58E-01	1.49E-03	1.65E-02	1.83E-05	3.63E-02	2.93E-03	5.57E-06	2.59E-07	3.03E-06	7.70E-05	2.23E-06	2.53E-02	2.35E-06	1.84E-01	0.00E+00	9.75E-08	1.25E-05	8.39E-02
2048	1.58E-01	1.50E-03	1.66E-02	1.84E-05	3.65E-02	2.94E-03	5.59E-06	2.60E-07	3.04E-06	7.72E-05	2.24E-06	2.53E-02	2.36E-06	1.84E-01	0.00E+00	9.79E-08	1.26E-05	8.39E-02
2049	1.38E-01	1.07E-03	1.17E-02	1.32E-05	2.89E-02	2.07E-03	4.01E-06	1.86E-07	2.17E-06	5.42E-05	1.60E-06	2.43E-02	1.69E-06	1.33E-01	0.00E+00	7.01E-08	9.01E-06	8.39E-02
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**1.81E-01**	**8.24E-03**	**4.06E-02**	**1.01E-04**	**7.45E-02**	**7.57E-03**	**3.08E-05**	**1.43E-06**	**1.67E-05**	**2.76E-04**	**1.23E-05**	**2.88E-02**	**1.30E-05**	**2.24E-01**	**0.00E+00**	**5.39E-07**	**6.93E-05**	**8.47E-02**

Table D-A1.1-18 Annual Construction HAP Emissions by Year, Alternative 4, Private Development (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2026	0.00E+00	4.49E-05	4.66E-04	2.63E-03	5.17E-06	9.16E-03	1.31E-03	3.56E-02	0.00E+00	0.00E+00	3.44E-02	0.00E+00	1.22E-02	2.01E-03	1.31E-06	7.84E-05	6.42E-06	3.30E-06
2027	0.00E+00	9.01E-05	9.34E-04	4.23E-03	1.04E-05	1.47E-02	2.55E-03	6.66E-02	0.00E+00	0.00E+00	6.72E-02	0.00E+00	2.24E-02	3.65E-03	2.62E-06	1.88E-05	1.21E-06	5.37E-06
2028	0.00E+00	8.53E-05	8.85E-04	4.03E-03	9.83E-06	2.75E-02	2.42E-03	1.78E-01	0.00E+00	0.00E+00	8.15E-02	0.00E+00	1.14E-01	3.86E-02	2.48E-06	1.77E-05	1.13E-06	5.13E-06
2029	0.00E+00	7.04E-05	7.30E-04	6.24E-03	8.11E-06	2.55E-02	2.00E-03	1.68E-01	0.00E+00	0.00E+00	7.06E-02	0.00E+00	1.11E-01	3.80E-02	2.05E-06	1.46E-05	9.19E-07	4.31E-06
2030	0.00E+00	6.99E-05	7.25E-04	3.58E-03	8.05E-06	2.63E-02	2.00E-03	1.69E-01	0.00E+00	0.00E+00	7.06E-02	0.00E+00	1.11E-01	3.81E-02	2.03E-06	1.67E-05	1.16E-06	4.04E-06
2031	0.00E+00	7.05E-05	7.32E-04	3.45E-03	8.12E-06	2.60E-02	2.01E-03	1.69E-01	0.00E+00	0.00E+00	7.09E-02	0.00E+00	1.11E-01	3.81E-02	2.05E-06	1.35E-05	8.87E-07	3.90E-06
2032	0.00E+00	6.60E-05	6.85E-04	3.28E-03	7.60E-06	2.60E-02	1.89E-03	1.67E-01	0.00E+00	0.00E+00	6.78E-02	0.00E+00	1.10E-01	3.79E-02	1.92E-06	1.29E-05	8.40E-07	3.80E-06
2033	0.00E+00	6.14E-05	6.37E-04	3.10E-03	7.07E-06	2.59E-02	1.76E-03	1.64E-01	0.00E+00	0.00E+00	6.46E-02	0.00E+00	1.09E-01	3.77E-02	1.79E-06	1.23E-05	7.86E-07	3.66E-06
2034	0.00E+00	5.18E-05	5.38E-04	5.55E-03	5.97E-06	2.45E-02	1.49E-03	1.58E-01	0.00E+00	0.00E+00	5.75E-02	0.00E+00	1.07E-01	3.73E-02	1.51E-06	1.05E-05	6.63E-07	3.18E-06
2035	0.00E+00	1.81E-05	1.88E-04	1.87E-03	2.08E-06	2.53E-02	5.86E-04	1.42E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.63E-02	5.27E-07	1.51E-05	1.08E-06	2.71E-06
2036	0.00E+00	2.34E-05	2.42E-04	1.73E-03	2.69E-06	2.64E-02	7.07E-04	1.47E-01	0.00E+00	0.00E+00	3.88E-02	0.00E+00	1.04E-01	3.63E-02	6.80E-07	7.13E-06	3.73E-07	2.71E-06
2037	0.00E+00	2.30E-05	2.39E-04	1.69E-03	2.65E-06	2.54E-02	6.96E-04	1.45E-01	0.00E+00	0.00E+00	3.82E-02	0.00E+00	1.03E-01	3.63E-02	6.70E-07	6.69E-06	3.58E-07	2.53E-06
2038	0.00E+00	2.30E-05	2.39E-04	1.69E-03	2.65E-06	2.54E-02	6.96E-04	1.45E-01	0.00E+00	0.00E+00	3.82E-02	0.00E+00	1.03E-01	3.63E-02	6.70E-07	6.69E-06	3.58E-07	2.53E-06
2039	0.00E+00	2.29E-05	2.38E-04	1.68E-03	2.64E-06	2.54E-02	6.93E-04	1.45E-01	0.00E+00	0.00E+00	3.81E-02	0.00E+00	1.03E-01	3.63E-02	6.67E-07	6.66E-06	3.56E-07	2.52E-06
2040	0.00E+00	1.83E-05	1.89E-04	1.50E-03	2.10E-06	2.53E-02	5.64E-04	1.43E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.61E-02	5.31E-07	5.83E-06	2.97E-07	2.31E-06
2041	0.00E+00	1.83E-05	1.89E-04	1.50E-03	2.10E-06	2.53E-02	5.64E-04	1.43E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.61E-02	5.31E-07	5.83E-06	2.97E-07	2.31E-06
2042	0.00E+00	1.83E-05	1.89E-04	1.50E-03	2.10E-06	2.53E-02	5.64E-04	1.43E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.61E-02	5.31E-07	5.83E-06	2.97E-07	2.31E-06
2043	0.00E+00	1.83E-05	1.89E-04	1.50E-03	2.10E-06	2.53E-02	5.64E-04	1.43E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.61E-02	5.31E-07	5.83E-06	2.97E-07	2.31E-06
2044	0.00E+00	1.83E-05	1.89E-04	1.50E-03	2.10E-06	2.53E-02	5.64E-04	1.43E-01	0.00E+00	0.00E+00	3.49E-02	0.00E+00	1.02E-01	3.61E-02	5.31E-07	5.83E-06	2.97E-07	2.31E-06
2045	0.00E+00	1.62E-05	1.68E-04	1.42E-03	1.87E-06	2.53E-02	5.07E-04	1.42E-01	0.00E+00	0.00E+00	3.35E-02	0.00E+00	1.02E-01	3.61E-02	4.72E-07	5.54E-06	2.74E-07	2.25E-06
2046	0.00E+00	1.63E-05	1.69E-04	1.42E-03	1.88E-06	2.53E-02	5.09E-04	1.42E-01	0.00E+00	0.00E+00	3.36E-02	0.00E+00	1.02E-01	3.61E-02	4.74E-07	5.57E-06	2.75E-07	2.26E-06
2047	0.00E+00	1.63E-05	1.69E-04	1.42E-03	1.88E-06	2.53E-02	5.09E-04	1.42E-01	0.00E+00	0.00E+00	3.36E-02	0.00E+00	1.02E-01	3.61E-02	4.74E-07	5.57E-06	2.75E-07	2.26E-06
2048	0.00E+00	1.63E-05	1.70E-04	1.43E-03	1.88E-06	2.54E-02	5.11E-04	1.42E-01	0.00E+00	0.00E+00	3.36E-02	0.00E+00	1.02E-01	3.61E-02	4.76E-07	5.59E-06	2.76E-07	2.27E-06
2049	0.00E+00	1.17E-05	1.21E-04	3.90E-03	1.35E-06	2.17E-02	3.64E-04	1.34E-01	0.00E+00	0.00E+00	2.91E-02	0.00E+00	9.92E-02	3.58E-02	3.41E-07	3.99E-06	1.97E-07	1.61E-06
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**0.00E+00**	**9.01E-05**	**9.34E-04**	**6.24E-03**	**1.04E-05**	**2.75E-02**	**2.55E-03**	**1.78E-01**	**0.00E+00**	**0.00E+00**	**8.15E-02**	**0.00E+00**	**1.14E-01**	**3.86E-02**	**2.62E-06**	**7.84E-05**	**6.42E-06**	**5.37E-06**

Table D-A1.1-18 Annual Construction HAP Emissions by Year, Alternative 4, Private Development (tons per year), Continued

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene /fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2026	9.37E-06	1.04E-05	2.87E-05	5.81E-05	9.76E-04	4.30E-07	1.04E-05	7.41E-04	3.41E-06	5.75E-08	4.41E-04	4.79E-07	2.81E-07	1.36E-01	3.69E-01
2027	1.86E-05	3.22E-06	1.34E-06	1.97E-06	6.27E-06	7.02E-07	1.23E-06	3.74E-06	8.28E-07	4.43E-08	8.77E-04	9.52E-07	5.59E-07	2.16E-01	6.31E-01
2028	1.72E-05	3.08E-06	1.27E-06	1.88E-06	6.09E-06	6.87E-07	1.18E-06	3.63E-06	8.11E-07	4.30E-08	8.08E-04	8.77E-07	5.15E-07	2.24E-01	1.09E+00
2029	1.38E-05	2.59E-06	1.05E-06	1.57E-06	5.21E-06	5.93E-07	1.01E-06	3.03E-06	7.00E-07	3.59E-08	6.51E-04	7.07E-07	4.15E-07	1.94E-01	1.01E+00
2030	1.37E-05	2.69E-06	2.31E-06	4.20E-06	5.06E-05	5.04E-07	1.36E-06	3.93E-05	7.34E-07	5.13E-08	6.43E-04	6.98E-07	4.10E-07	2.06E-01	1.02E+00
2031	1.38E-05	2.27E-06	9.73E-07	1.44E-06	4.32E-06	4.86E-07	8.70E-07	3.42E-06	5.75E-07	4.05E-08	6.49E-04	7.05E-07	4.14E-07	2.02E-01	1.01E+00
2032	1.29E-05	2.21E-06	9.35E-07	1.40E-06	4.29E-06	4.87E-07	8.57E-07	3.37E-06	5.76E-07	4.00E-08	6.08E-04	6.60E-07	3.88E-07	2.01E-01	1.00E+00
2033	1.20E-05	2.13E-06	8.89E-07	1.35E-06	4.21E-06	4.83E-07	8.36E-07	3.30E-06	5.71E-07	3.91E-08	5.63E-04	6.11E-07	3.59E-07	1.99E-01	9.87E-01
2034	9.96E-06	1.85E-06	7.62E-07	1.17E-06	3.73E-06	4.31E-07	7.34E-07	2.89E-06	5.09E-07	3.42E-08	4.69E-04	5.09E-07	2.99E-07	1.78E-01	9.30E-01
2035	3.46E-06	2.47E-06	4.18E-06	8.52E-06	1.31E-04	4.36E-07	1.92E-06	1.02E-04	9.01E-07	6.34E-08	1.63E-04	1.77E-07	1.04E-07	1.86E-01	8.58E-01
2036	4.45E-06	1.52E-06	5.39E-07	9.97E-07	3.62E-06	4.55E-07	6.80E-07	3.33E-06	5.39E-07	3.95E-08	2.10E-04	2.28E-07	1.34E-07	1.99E-01	8.95E-01
2037	4.39E-06	1.40E-06	5.07E-07	9.32E-07	3.30E-06	4.15E-07	6.27E-07	3.24E-06	4.91E-07	3.84E-08	2.06E-04	2.24E-07	1.32E-07	1.86E-01	8.70E-01
2038	4.39E-06	1.40E-06	5.07E-07	9.32E-07	3.30E-06	4.15E-07	6.27E-07	3.24E-06	4.91E-07	3.84E-08	2.06E-04	2.24E-07	1.32E-07	1.86E-01	8.70E-01
2039	4.37E-06	1.39E-06	5.05E-07	9.28E-07	3.29E-06	4.13E-07	6.24E-07	3.23E-06	4.89E-07	3.83E-08	2.06E-04	2.23E-07	1.31E-07	1.85E-01	8.68E-01
2040	3.39E-06	1.27E-06	4.47E-07	8.54E-07	3.08E-06	3.93E-07	5.82E-07	3.14E-06	4.65E-07	3.72E-08	1.60E-04	1.73E-07	1.02E-07	1.84E-01	8.55E-01
2041	3.39E-06	1.27E-06	4.47E-07	8.54E-07	3.08E-06	3.93E-07	5.82E-07	3.14E-06	4.65E-07	3.72E-08	1.60E-04	1.73E-07	1.02E-07	1.84E-01	8.55E-01
2042	3.39E-06	1.27E-06	4.47E-07	8.54E-07	3.08E-06	3.93E-07	5.82E-07	3.14E-06	4.65E-07	3.72E-08	1.60E-04	1.73E-07	1.02E-07	1.84E-01	8.55E-01
2043	3.39E-06	1.27E-06	4.47E-07	8.54E-07	3.08E-06	3.93E-07	5.82E-07	3.14E-06	4.65E-07	3.72E-08	1.60E-04	1.73E-07	1.02E-07	1.84E-01	8.55E-01
2044	3.39E-06	1.27E-06	4.47E-07	8.54E-07	3.08E-06	3.93E-07	5.82E-07	3.14E-06	4.65E-07	3.72E-08	1.60E-04	1.73E-07	1.02E-07	1.84E-01	8.55E-01
2045	2.97E-06	1.23E-06	4.26E-07	8.30E-07	3.05E-06	3.91E-07	5.72E-07	3.09E-06	4.62E-07	3.65E-08	1.40E-04	1.52E-07	8.91E-08	1.83E-01	8.47E-01
2046	2.99E-06	1.24E-06	4.28E-07	8.34E-07	3.06E-06	3.92E-07	5.74E-07	3.10E-06	4.64E-07	3.67E-08	1.41E-04	1.53E-07	8.97E-08	1.84E-01	8.49E-01
2047	2.99E-06	1.24E-06	4.28E-07	8.34E-07	3.06E-06	3.92E-07	5.74E-07	3.10E-06	4.64E-07	3.67E-08	1.41E-04	1.53E-07	8.97E-08	1.84E-01	8.49E-01
2048	3.00E-06	1.24E-06	4.30E-07	8.37E-07	3.07E-06	3.94E-07	5.76E-07	3.11E-06	4.66E-07	3.68E-08	1.41E-04	1.53E-07	9.00E-08	1.84E-01	8.50E-01
2049	2.15E-06	8.88E-07	3.06E-07	5.91E-07	2.19E-06	2.79E-07	4.09E-07	2.12E-06	3.31E-07	2.52E-08	1.01E-04	1.10E-07	6.45E-08	1.38E-01	7.48E-01
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**1.86E-05**	**1.04E-05**	**2.87E-05**	**5.81E-05**	**9.76E-04**	**7.02E-07**	**1.04E-05**	**7.41E-04**	**3.41E-06**	**6.34E-08**	**8.77E-04**	**9.52E-07**	**5.59E-07**	**2.24E-01**	**1.09E+00**

Table D-A1.1-19 Annual Construction HAP Emissions by Year, Alternative 5, Private Development (tons per year)

Year	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*	*Methyl isobutyl ketone (Hexone)*
2026	4.81E-02	3.75E-03	2.00E-02	4.61E-05	3.54E-02	3.98E-03	1.40E-05	6.51E-07	7.60E-06	1.44E-04	5.60E-06	3.49E-03	5.90E-06	1.14E-01	0.00E+00	2.45E-07	3.15E-05	4.62E-04
2027	7.44E-02	7.50E-03	3.53E-02	9.23E-05	6.35E-02	6.63E-03	2.81E-05	1.30E-06	1.52E-05	2.47E-04	1.12E-05	6.12E-03	1.18E-05	1.73E-01	0.00E+00	4.91E-07	6.31E-05	9.25E-04
2028	1.45E-01	7.11E-03	3.36E-02	8.74E-05	6.07E-02	6.31E-03	2.66E-05	1.24E-06	1.44E-05	2.35E-04	1.06E-05	2.33E-02	1.12E-05	1.77E-01	0.00E+00	4.65E-07	5.98E-05	6.72E-02
2029	1.35E-01	5.87E-03	2.82E-02	7.21E-05	5.51E-02	5.27E-03	2.19E-05	1.02E-06	1.19E-05	1.95E-04	8.78E-06	2.23E-02	9.23E-06	1.54E-01	0.00E+00	3.84E-07	4.93E-05	6.70E-02
2030	1.40E-01	5.83E-03	2.91E-02	7.16E-05	5.28E-02	5.55E-03	2.18E-05	1.01E-06	1.18E-05	2.03E-04	8.71E-06	2.25E-02	9.17E-06	1.67E-01	0.00E+00	3.81E-07	4.90E-05	6.70E-02
2031	1.37E-01	5.88E-03	2.86E-02	7.22E-05	5.20E-02	5.39E-03	2.20E-05	1.02E-06	1.19E-05	1.98E-04	8.79E-06	2.24E-02	9.25E-06	1.59E-01	0.00E+00	3.84E-07	4.94E-05	6.70E-02
2032	1.36E-01	5.50E-03	2.74E-02	6.76E-05	5.03E-02	5.15E-03	2.06E-05	9.56E-07	1.12E-05	1.87E-04	8.23E-06	2.22E-02	8.66E-06	1.59E-01	0.00E+00	3.60E-07	4.62E-05	6.70E-02
2033	1.35E-01	5.11E-03	2.61E-02	6.29E-05	4.82E-02	4.89E-03	1.91E-05	8.89E-07	1.04E-05	1.76E-04	7.65E-06	2.20E-02	8.05E-06	1.57E-01	0.00E+00	3.34E-07	4.30E-05	6.69E-02
2034	1.27E-01	4.32E-03	2.25E-02	5.31E-05	4.57E-02	4.20E-03	1.61E-05	7.51E-07	8.76E-06	1.49E-04	6.46E-06	2.14E-02	6.80E-06	1.41E-01	0.00E+00	2.82E-07	3.63E-05	6.68E-02
2035	1.28E-01	1.31E-03	1.44E-02	1.61E-05	2.95E-02	2.79E-03	4.89E-06	2.27E-07	2.65E-06	7.92E-05	1.96E-06	2.02E-02	2.06E-06	1.52E-01	0.00E+00	8.55E-08	1.10E-05	6.64E-02
2036	1.31E-01	1.68E-03	1.56E-02	2.07E-05	3.35E-02	2.79E-03	6.29E-06	2.92E-07	3.41E-06	7.76E-05	2.52E-06	2.04E-02	2.65E-06	1.60E-01	0.00E+00	1.10E-07	1.41E-05	6.65E-02
2037	1.25E-01	1.65E-03	1.46E-02	2.03E-05	3.08E-02	2.64E-03	6.17E-06	2.87E-07	3.35E-06	7.56E-05	2.47E-06	2.02E-02	2.60E-06	1.45E-01	0.00E+00	1.08E-07	1.39E-05	6.65E-02
2038	1.25E-01	1.65E-03	1.46E-02	2.03E-05	3.08E-02	2.64E-03	6.17E-06	2.87E-07	3.35E-06	7.56E-05	2.47E-06	2.02E-02	2.60E-06	1.45E-01	0.00E+00	1.08E-07	1.39E-05	6.65E-02
2039	1.25E-01	1.64E-03	1.45E-02	2.02E-05	3.06E-02	2.63E-03	6.14E-06	2.86E-07	3.34E-06	7.53E-05	2.46E-06	2.02E-02	2.59E-06	1.45E-01	0.00E+00	1.07E-07	1.38E-05	6.65E-02
2040	1.24E-01	1.31E-03	1.34E-02	1.61E-05	2.90E-02	2.41E-03	4.89E-06	2.28E-07	2.66E-06	6.54E-05	1.96E-06	2.00E-02	2.06E-06	1.44E-01	0.00E+00	8.56E-08	1.10E-05	6.64E-02
2041	1.24E-01	1.31E-03	1.34E-02	1.61E-05	2.90E-02	2.41E-03	4.89E-06	2.28E-07	2.66E-06	6.54E-05	1.96E-06	2.00E-02	2.06E-06	1.44E-01	0.00E+00	8.56E-08	1.10E-05	6.64E-02
2042	1.24E-01	1.31E-03	1.34E-02	1.61E-05	2.90E-02	2.41E-03	4.89E-06	2.28E-07	2.66E-06	6.54E-05	1.96E-06	2.00E-02	2.06E-06	1.44E-01	0.00E+00	8.56E-08	1.10E-05	6.64E-02
2043	1.24E-01	1.31E-03	1.34E-02	1.61E-05	2.90E-02	2.41E-03	4.89E-06	2.28E-07	2.66E-06	6.54E-05	1.96E-06	2.00E-02	2.06E-06	1.44E-01	0.00E+00	8.56E-08	1.10E-05	6.64E-02
2044	1.24E-01	1.31E-03	1.34E-02	1.61E-05	2.90E-02	2.41E-03	4.89E-06	2.28E-07	2.66E-06	6.54E-05	1.96E-06	2.00E-02	2.06E-06	1.44E-01	0.00E+00	8.56E-08	1.10E-05	6.64E-02
2045	1.24E-01	1.16E-03	1.29E-02	1.43E-05	2.82E-02	2.30E-03	4.35E-06	2.02E-07	2.36E-06	6.08E-05	1.74E-06	2.00E-02	1.83E-06	1.43E-01	0.00E+00	7.60E-08	9.78E-06	6.64E-02
2046	1.24E-01	1.17E-03	1.29E-02	1.44E-05	2.83E-02	2.31E-03	4.36E-06	2.03E-07	2.37E-06	6.11E-05	1.75E-06	2.00E-02	1.84E-06	1.44E-01	0.00E+00	7.63E-08	9.82E-06	6.64E-02
2047	1.24E-01	1.17E-03	1.29E-02	1.44E-05	2.83E-02	2.31E-03	4.36E-06	2.03E-07	2.37E-06	6.11E-05	1.75E-06	2.00E-02	1.84E-06	1.44E-01	0.00E+00	7.63E-08	9.82E-06	6.64E-02
2048	1.24E-01	1.17E-03	1.30E-02	1.44E-05	2.84E-02	2.32E-03	4.38E-06	2.04E-07	2.38E-06	6.13E-05	1.75E-06	2.00E-02	1.84E-06	1.44E-01	0.00E+00	7.66E-08	9.85E-06	6.64E-02
2049	1.09E-01	8.39E-04	9.19E-03	1.03E-05	2.41E-02	1.63E-03	3.14E-06	1.46E-07	1.70E-06	4.30E-05	1.26E-06	1.92E-02	1.32E-06	1.05E-01	0.00E+00	5.49E-08	7.06E-06	6.64E-02
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**1.45E-01**	**7.50E-03**	**3.53E-02**	**9.23E-05**	**6.35E-02**	**6.63E-03**	**2.81E-05**	**1.30E-06**	**1.52E-05**	**2.47E-04**	**1.12E-05**	**2.33E-02**	**1.18E-05**	**1.77E-01**	**0.00E+00**	**4.91E-07**	**6.31E-05**	**6.72E-02**

Table D-A1.1-19 Annual Construction HAP Emissions by Year, Alternative 5, Private Development (tons per year), Continued

Year	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	*Antimony*	*Arsenic*	*Cadmium*
2026	0.00E+00	4.09E-05	4.24E-04	2.37E-03	4.71E-06	7.63E-03	1.19E-03	3.13E-02	0.00E+00	0.00E+00	3.10E-02	0.00E+00	1.08E-02	1.82E-03	1.19E-06	7.71E-05	6.35E-06	2.85E-06
2027	0.00E+00	8.20E-05	8.50E-04	3.75E-03	9.44E-06	1.16E-02	2.32E-03	5.77E-02	0.00E+00	0.00E+00	6.05E-02	0.00E+00	1.95E-02	3.29E-03	2.39E-06	1.62E-05	1.07E-06	4.48E-06
2028	0.00E+00	7.76E-05	8.05E-04	3.57E-03	8.94E-06	2.16E-02	2.20E-03	1.46E-01	0.00E+00	0.00E+00	7.14E-02	0.00E+00	9.19E-02	3.10E-02	2.26E-06	1.52E-05	1.00E-06	4.26E-06
2029	0.00E+00	6.41E-05	6.65E-04	6.56E-03	7.38E-06	2.01E-02	1.81E-03	1.37E-01	0.00E+00	0.00E+00	6.15E-02	0.00E+00	8.89E-02	3.04E-02	1.87E-06	1.26E-05	8.18E-07	3.58E-06
2030	0.00E+00	6.36E-05	6.60E-04	3.17E-03	7.33E-06	2.10E-02	1.82E-03	1.38E-01	0.00E+00	0.00E+00	6.16E-02	0.00E+00	8.93E-02	3.05E-02	1.85E-06	1.50E-05	1.06E-06	3.42E-06
2031	0.00E+00	6.42E-05	6.66E-04	3.05E-03	7.39E-06	2.05E-02	1.82E-03	1.37E-01	0.00E+00	0.00E+00	6.18E-02	0.00E+00	8.91E-02	3.04E-02	1.87E-06	1.17E-05	7.88E-07	3.25E-06
2032	0.00E+00	6.01E-05	6.23E-04	2.90E-03	6.92E-06	2.05E-02	1.71E-03	1.36E-01	0.00E+00	0.00E+00	5.90E-02	0.00E+00	8.84E-02	3.03E-02	1.75E-06	1.12E-05	7.46E-07	3.16E-06
2033	0.00E+00	5.58E-05	5.79E-04	2.73E-03	6.43E-06	2.04E-02	1.59E-03	1.33E-01	0.00E+00	0.00E+00	5.60E-02	0.00E+00	8.77E-02	3.01E-02	1.63E-06	1.06E-05	6.98E-07	3.04E-06
2034	0.00E+00	4.72E-05	4.89E-04	5.93E-03	5.43E-06	1.93E-02	1.35E-03	1.27E-01	0.00E+00	0.00E+00	4.97E-02	0.00E+00	8.57E-02	2.98E-02	1.37E-06	9.04E-06	5.89E-07	2.64E-06
2035	0.00E+00	1.43E-05	1.48E-04	1.53E-03	1.64E-06	2.04E-02	4.66E-04	1.13E-01	0.00E+00	0.00E+00	2.78E-02	0.00E+00	8.10E-02	2.87E-02	4.16E-07	1.39E-05	1.01E-06	2.24E-06
2036	0.00E+00	1.84E-05	1.91E-04	1.38E-03	2.12E-06	2.10E-02	5.58E-04	1.17E-01	0.00E+00	0.00E+00	3.07E-02	0.00E+00	8.20E-02	2.88E-02	5.35E-07	5.71E-06	2.97E-07	2.19E-06
2037	0.00E+00	1.80E-05	1.87E-04	1.34E-03	2.08E-06	2.00E-02	5.46E-04	1.15E-01	0.00E+00	0.00E+00	3.01E-02	0.00E+00	8.14E-02	2.87E-02	5.25E-07	5.21E-06	2.79E-07	1.98E-06
2038	0.00E+00	1.80E-05	1.87E-04	1.34E-03	2.08E-06	2.00E-02	5.46E-04	1.15E-01	0.00E+00	0.00E+00	3.01E-02	0.00E+00	8.14E-02	2.87E-02	5.25E-07	5.21E-06	2.79E-07	1.98E-06
2039	0.00E+00	1.80E-05	1.86E-04	1.34E-03	2.07E-06	1.99E-02	5.44E-04	1.15E-01	0.00E+00	0.00E+00	3.00E-02	0.00E+00	8.14E-02	2.87E-02	5.23E-07	5.20E-06	2.79E-07	1.97E-06
2040	0.00E+00	1.43E-05	1.48E-04	1.20E-03	1.65E-06	1.99E-02	4.43E-04	1.13E-01	0.00E+00	0.00E+00	2.75E-02	0.00E+00	8.08E-02	2.86E-02	4.16E-07	4.55E-06	2.33E-07	1.81E-06
2041	0.00E+00	1.43E-05	1.48E-04	1.20E-03	1.65E-06	1.99E-02	4.43E-04	1.13E-01	0.00E+00	0.00E+00	2.75E-02	0.00E+00	8.08E-02	2.86E-02	4.16E-07	4.55E-06	2.33E-07	1.81E-06
2042	0.00E+00	1.43E-05	1.48E-04	1.20E-03	1.65E-06	1.99E-02	4.43E-04	1.13E-01	0.00E+00	0.00E+00	2.75E-02	0.00E+00	8.08E-02	2.86E-02	4.16E-07	4.55E-06	2.33E-07	1.81E-06
2043	0.00E+00	1.43E-05	1.48E-04	1.20E-03	1.65E-06	1.99E-02	4.43E-04	1.13E-01	0.00E+00	0.00E+00	2.75E-02	0.00E+00	8.08E-02	2.86E-02	4.16E-07	4.55E-06	2.33E-07	1.81E-06
2044	0.00E+00	1.43E-05	1.48E-04	1.20E-03	1.65E-06	1.99E-02	4.43E-04	1.13E-01	0.00E+00	0.00E+00	2.75E-02	0.00E+00	8.08E-02	2.86E-02	4.16E-07	4.55E-06	2.33E-07	1.81E-06
2045	0.00E+00	1.27E-05	1.32E-04	1.13E-03	1.46E-06	1.99E-02	3.98E-04	1.12E-01	0.00E+00	0.00E+00	2.64E-02	0.00E+00	8.05E-02	2.85E-02	3.70E-07	4.32E-06	2.14E-07	1.77E-06
2046	0.00E+00	1.28E-05	1.32E-04	1.14E-03	1.47E-06	1.99E-02	4.00E-04	1.12E-01	0.00E+00	0.00E+00	2.64E-02	0.00E+00	8.05E-02	2.85E-02	3.71E-07	4.34E-06	2.15E-07	1.77E-06
2047	0.00E+00	1.28E-05	1.32E-04	1.14E-03	1.47E-06	1.99E-02	4.00E-04	1.12E-01	0.00E+00	0.00E+00	2.64E-02	0.00E+00	8.05E-02	2.85E-02	3.71E-07	4.34E-06	2.15E-07	1.77E-06
2048	0.00E+00	1.28E-05	1.33E-04	1.14E-03	1.47E-06	1.99E-02	4.01E-04	1.12E-01	0.00E+00	0.00E+00	2.65E-02	0.00E+00	8.05E-02	2.85E-02	3.73E-07	4.36E-06	2.16E-07	1.78E-06
2049	0.00E+00	9.17E-06	9.51E-05	4.39E-03	1.06E-06	1.71E-02	2.86E-04	1.06E-01	0.00E+00	0.00E+00	2.29E-02	0.00E+00	7.84E-02	2.83E-02	2.67E-07	3.13E-06	1.55E-07	1.27E-06
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**0.00E+00**	**8.20E-05**	**8.50E-04**	**6.56E-03**	**9.44E-06**	**2.16E-02**	**2.32E-03**	**1.46E-01**	**0.00E+00**	**0.00E+00**	**7.14E-02**	**0.00E+00**	**9.19E-02**	**3.10E-02**	**2.39E-06**	**7.71E-05**	**6.35E-06**	**4.48E-06**

Table D-A1.1-19 Annual Construction HAP Emissions by Year, Alternative 5, Private Development (tons per year) (continued)

Year	*Chlorine*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Mercury*	*Nickel*	*Phosphorus*	*Selenium*	*Uranium*	*2,6-Dimethylnaphthalene*	*1-methylfluoranthene, C-methylpyrene /fluoranthene*	*C-methylpyrene & methylfluoranthene*	*Highest Single HAP*	*Combined HAPs*
2026	8.54E-06	1.02E-05	2.86E-05	5.80E-05	9.75E-04	3.56E-07	1.03E-05	7.40E-04	3.32E-06	5.11E-08	4.02E-04	4.37E-07	2.56E-07	1.14E-01	3.18E-01
2027	1.69E-05	2.69E-06	1.16E-06	1.65E-06	5.03E-06	5.52E-07	1.00E-06	3.03E-06	6.52E-07	3.59E-08	7.95E-04	8.64E-07	5.07E-07	1.73E-01	5.28E-01
2028	1.56E-05	2.56E-06	1.09E-06	1.56E-06	4.85E-06	5.36E-07	9.60E-07	2.93E-06	6.32E-07	3.47E-08	7.35E-04	7.98E-07	4.69E-07	1.77E-01	8.90E-01
2029	1.27E-05	2.15E-06	9.02E-07	1.31E-06	4.16E-06	4.63E-07	8.16E-07	2.45E-06	5.46E-07	2.90E-08	5.96E-04	6.47E-07	3.80E-07	1.54E-01	8.20E-01
2030	1.24E-05	2.34E-06	2.18E-06	3.96E-06	4.95E-05	4.05E-07	1.20E-06	3.83E-05	6.17E-07	4.24E-08	5.84E-04	6.34E-07	3.72E-07	1.67E-01	8.37E-01
2031	1.25E-05	1.89E-06	8.38E-07	1.20E-06	3.45E-06	3.79E-07	7.08E-07	2.75E-06	4.48E-07	3.26E-08	5.90E-04	6.41E-07	3.76E-07	1.59E-01	8.23E-01
2032	1.18E-05	1.84E-06	8.05E-07	1.17E-06	3.42E-06	3.80E-07	6.97E-07	2.72E-06	4.50E-07	3.23E-08	5.54E-04	6.01E-07	3.53E-07	1.59E-01	8.12E-01
2033	1.09E-05	1.77E-06	7.63E-07	1.12E-06	3.36E-06	3.77E-07	6.78E-07	2.67E-06	4.45E-07	3.16E-08	5.13E-04	5.57E-07	3.27E-07	1.57E-01	7.98E-01
2034	9.09E-06	1.54E-06	6.53E-07	9.75E-07	2.97E-06	3.36E-07	5.95E-07	2.33E-06	3.98E-07	2.76E-08	4.28E-04	4.65E-07	2.73E-07	1.41E-01	7.53E-01
2035	2.73E-06	2.22E-06	4.06E-06	8.28E-06	1.30E-04	3.62E-07	1.80E-06	1.01E-04	8.09E-07	5.34E-08	1.28E-04	1.39E-07	8.19E-08	1.52E-01	6.89E-01
2036	3.51E-06	1.22E-06	4.32E-07	8.04E-07	2.93E-06	3.68E-07	5.49E-07	2.72E-06	4.36E-07	3.22E-08	1.65E-04	1.79E-07	1.05E-07	1.60E-01	7.13E-01
2037	3.43E-06	1.09E-06	3.96E-07	7.32E-07	2.57E-06	3.24E-07	4.90E-07	2.62E-06	3.83E-07	3.10E-08	1.62E-04	1.75E-07	1.03E-07	1.45E-01	6.84E-01
2038	3.43E-06	1.09E-06	3.96E-07	7.32E-07	2.57E-06	3.24E-07	4.90E-07	2.62E-06	3.83E-07	3.10E-08	1.62E-04	1.75E-07	1.03E-07	1.45E-01	6.84E-01
2039	3.42E-06	1.09E-06	3.95E-07	7.30E-07	2.56E-06	3.23E-07	4.88E-07	2.61E-06	3.82E-07	3.09E-08	1.61E-04	1.75E-07	1.03E-07	1.45E-01	6.83E-01
2040	2.66E-06	9.88E-07	3.50E-07	6.71E-07	2.40E-06	3.07E-07	4.55E-07	2.54E-06	3.63E-07	3.00E-08	1.25E-04	1.36E-07	7.98E-08	1.44E-01	6.73E-01
2041	2.66E-06	9.88E-07	3.50E-07	6.71E-07	2.40E-06	3.07E-07	4.55E-07	2.54E-06	3.63E-07	3.00E-08	1.25E-04	1.36E-07	7.98E-08	1.44E-01	6.73E-01
2042	2.66E-06	9.88E-07	3.50E-07	6.71E-07	2.40E-06	3.07E-07	4.55E-07	2.54E-06	3.63E-07	3.00E-08	1.25E-04	1.36E-07	7.98E-08	1.44E-01	6.73E-01
2043	2.66E-06	9.88E-07	3.50E-07	6.71E-07	2.40E-06	3.07E-07	4.55E-07	2.54E-06	3.63E-07	3.00E-08	1.25E-04	1.36E-07	7.98E-08	1.44E-01	6.73E-01
2044	2.66E-06	9.88E-07	3.50E-07	6.71E-07	2.40E-06	3.07E-07	4.55E-07	2.54E-06	3.63E-07	3.00E-08	1.25E-04	1.36E-07	7.98E-08	1.44E-01	6.73E-01
2045	2.32E-06	9.61E-07	3.33E-07	6.52E-07	2.37E-06	3.05E-07	4.47E-07	2.49E-06	3.61E-07	2.95E-08	1.09E-04	1.19E-07	6.97E-08	1.43E-01	6.67E-01
2046	2.33E-06	9.65E-07	3.35E-07	6.55E-07	2.38E-06	3.06E-07	4.49E-07	2.50E-06	3.63E-07	2.96E-08	1.10E-04	1.19E-07	7.00E-08	1.44E-01	6.68E-01
2047	2.33E-06	9.65E-07	3.35E-07	6.55E-07	2.38E-06	3.06E-07	4.49E-07	2.50E-06	3.63E-07	2.96E-08	1.10E-04	1.19E-07	7.00E-08	1.44E-01	6.68E-01
2048	2.34E-06	9.70E-07	3.36E-07	6.58E-07	2.40E-06	3.08E-07	4.51E-07	2.51E-06	3.64E-07	2.97E-08	1.10E-04	1.20E-07	7.03E-08	1.44E-01	6.69E-01
2049	1.69E-06	6.96E-07	2.40E-07	4.67E-07	1.72E-06	2.20E-07	3.22E-07	1.71E-06	2.60E-07	2.03E-08	7.94E-05	8.62E-08	5.06E-08	1.09E-01	5.93E-01
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum	**1.69E-05**	**1.02E-05**	**2.86E-05**	**5.80E-05**	**9.75E-04**	**5.52E-07**	**1.03E-05**	**7.40E-04**	**3.32E-06**	**5.34E-08**	**7.95E-04**	**8.64E-07**	**5.07E-07**	**1.77E-01**	**8.90E-01**

Table D-A1.1-20 Annual Construction GHG Emissions, Alternative 1

Year	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2021	2,200	0.3	0.0	2,207
2022	2,321	0.2	0.0	2,327
2023	2,271	0.2	0.0	2,276
2024	2,259	0.2	0.0	2,265
2025	1,393	0.2	0.0	1,397
2026	0	0.0	0.0	0
2027	0	0.0	0.0	0
2028	0	0.0	0.0	0
2029	0	0.0	0.0	0
2030	0	0.0	0.0	0
2031	0	0.0	0.0	0
2032	0	0.0	0.0	0
2033	0	0.0	0.0	0
2034	0	0.0	0.0	0
2035	0	0.0	0.0	0
2036	0	0.0	0.0	0
2037	0	0.0	0.0	0
2038	0	0.0	0.0	0
2039	0	0.0	0.0	0
2040	0	0.0	0.0	0
2041	0	0.0	0.0	0
2042	0	0.0	0.0	0
2043	0	0.0	0.0	0
2044	0	0.0	0.0	0
2045	0	0.0	0.0	0
2046	0	0.0	0.0	0
2047	0	0.0	0.0	0
2048	0	0.0	0.0	0
2049	0	0.0	0.0	0
2050	0	0.0	0.0	0
Total	**10,443**	**1.1**	**0.0**	**10,472**
Amortized Annual Emissions(1)	**348**	**0.0**	**0.0**	**349**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Note : (1)Construction emissions are amortized over 30 years.

Table D-A1.1-21 Annual Construction GHG Emissions, Alternative 2

Year [1]	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2021	3,319	0.4	0.0	3,328
2022	3,347	0.4	0.0	3,356
2023	3,268	0.3	0.0	3,276
2024	3,217	0.3	0.0	3,226
2025	2,709	0.3	0.0	2,716
2026	3,346	0.5	0.0	3,359
2027	3,582	0.5	0.0	3,595
2028	3,542	0.5	0.0	3,555
2029	3,062	0.4	0.0	3,073
2030	4,214	0.2	0.0	4,219
2031	3,738	0.2	0.0	3,742
2032	3,737	0.2	0.0	3,742
2033	3,696	0.2	0.0	3,701
2034	3,297	0.1	0.0	3,301
2035	4,844	0.3	0.0	4,850
2036	3,811	0.2	0.0	3,815
2037	3,691	0.2	0.0	3,695
2038	3,691	0.2	0.0	3,695
2039	3,677	0.2	0.0	3,681
2040	3,667	0.2	0.0	3,671
2041	3,667	0.2	0.0	3,671
2042	3,667	0.2	0.0	3,671
2043	3,667	0.2	0.0	3,671
2044	3,667	0.2	0.0	3,671
2045	3,642	0.1	0.0	3,645
2046	3,656	0.1	0.0	3,659
2047	3,656	0.1	0.0	3,659
2048	3,670	0.1	0.0	3,673
2049	2,606	0.1	0.0	2,609
2050	0	0.0	0.0	0
Total	**103,353**	**6.9**	**0.0**	**103,525**
Amortized Annual Emissions[2]	**3,445**	**0.2**	**0.0**	**3,451**

Legend: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes: [1]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[2]Construction emissions are amortized over 30 years.

Table D-A1.1-22 Annual Construction GHG Emissions, Alternative 3

Year [(1)]	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2021	3,319	0.4	0.0	3,328
2022	3,347	0.4	0.0	3,356
2023	3,268	0.3	0.0	3,276
2024	3,217	0.3	0.0	3,226
2025	2,709	0.3	0.0	2,716
2026	2,766	0.4	0.0	2,776
2027	2,443	0.3	0.0	2,451
2028	2,416	0.3	0.0	2,425
2029	2,095	0.3	0.0	2,102
2030	3,082	0.2	0.0	3,086
2031	2,546	0.1	0.0	2,549
2032	2,546	0.1	0.0	2,549
2033	2,518	0.1	0.0	2,521
2034	2,252	0.1	0.0	2,255
2035	3,942	0.2	0.0	3,948
2036	2,530	0.1	0.0	2,533
2037	2,515	0.1	0.0	2,518
2038	2,515	0.1	0.0	2,518
2039	2,505	0.1	0.0	2,508
2040	2,499	0.1	0.0	2,501
2041	2,499	0.1	0.0	2,501
2042	2,499	0.1	0.0	2,501
2043	2,499	0.1	0.0	2,501
2044	2,499	0.1	0.0	2,501
2045	2,481	0.1	0.0	2,484
2046	2,491	0.1	0.0	2,493
2047	2,491	0.1	0.0	2,493
2048	2,500	0.1	0.0	2,503
2049	1,791	0.1	0.0	1,793
2050	0	0.0	0.0	0
Total	**76,779**	**5.4**	**0.0**	**76,913**
Amortized Annual Emissions[(2)]	**2,559**	**0.2**	**0.0**	**2,564**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]Construction emissions are amortized over 30 years.

Table D-A1.1-23 Annual Construction GHG Emissions, Alternative 4

Year [(1)]	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2021	3,319	0.4	0.0	3,328
2022	3,347	0.4	0.0	3,356
2023	3,268	0.3	0.0	3,276
2024	3,217	0.3	0.0	3,226
2025	2,709	0.3	0.0	2,716
2026	4,822	0.6	0.0	4,838
2027	6,793	0.8	0.0	6,814
2028	6,587	0.8	0.0	6,607
2029	5,664	0.7	0.0	5,681
2030	7,122	0.3	0.0	7,130
2031	6,788	0.3	0.0	6,794
2032	6,767	0.3	0.0	6,774
2033	6,676	0.3	0.0	6,682
2034	5,935	0.2	0.0	5,941
2035	6,125	0.3	0.0	6,132
2036	5,876	0.2	0.0	5,882
2037	5,456	0.2	0.0	5,462
2038	5,456	0.2	0.0	5,462
2039	5,435	0.2	0.0	5,441
2040	5,420	0.2	0.0	5,426
2041	5,420	0.2	0.0	5,426
2042	5,420	0.2	0.0	5,426
2043	5,420	0.2	0.0	5,426
2044	5,420	0.2	0.0	5,426
2045	5,383	0.2	0.0	5,388
2046	5,403	0.2	0.0	5,409
2047	5,403	0.2	0.0	5,409
2048	5,424	0.2	0.0	5,430
2049	3,829	0.2	0.0	3,833
2050	0	0.0	0.0	0
Total	**153,903**	**9.4**	**0.0**	**154,138**
Amortized Annual Emissions[(2)]	**5,130**	**0.3**	**0.0**	**5,138**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]Construction emissions are amortized over 30 years.

Table D-A1.1-24 Annual Construction GHG Emissions, Alternative 5

Year [(1)]	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2021	3,319	0.4	0.0	3,328
2022	3,347	0.4	0.0	3,356
2023	3,268	0.3	0.0	3,276
2024	3,217	0.3	0.0	3,226
2025	2,709	0.3	0.0	2,716
2026	4,222	0.6	0.0	4,236
2027	5,687	0.7	0.0	5,704
2028	5,477	0.6	0.0	5,492
2029	4,709	0.5	0.0	4,723
2030	6,003	0.2	0.0	6,009
2031	5,611	0.2	0.0	5,616
2032	5,590	0.2	0.0	5,596
2033	5,512	0.2	0.0	5,517
2034	4,902	0.2	0.0	4,907
2035	5,091	0.3	0.0	5,097
2036	4,752	0.2	0.0	4,756
2037	4,292	0.2	0.0	4,297
2038	4,292	0.2	0.0	4,297
2039	4,276	0.2	0.0	4,280
2040	4,264	0.2	0.0	4,269
2041	4,264	0.2	0.0	4,269
2042	4,264	0.2	0.0	4,269
2043	4,264	0.2	0.0	4,269
2044	4,264	0.2	0.0	4,269
2045	4,235	0.2	0.0	4,239
2046	4,251	0.2	0.0	4,255
2047	4,251	0.2	0.0	4,255
2048	4,267	0.2	0.0	4,272
2049	3,023	0.1	0.0	3,026
2050	0	0.0	0.0	0
Total	**127,625**	**7.9**	**0.0**	**127,822**
Amortized Annual Emissions[(2)]	**4,254**	**0.3**	**0.0**	**4,261**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]Construction emissions are amortized over 30 years.

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Attachment 1.2

Annual Operational Emissions Tables

List of Tables

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Table D-A1.2-1 Annual Operational Emissions by Source Category, 2020 Existing Conditions

Source Category	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
Vehicle Trips	1.66	7.41	19.83	0.06	5.35	0.06	5.42	1.43	0.06	1.49
Consumer Products	3.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operational Equipment	0.21	1.82	1.67	0.00	0.00	0.13	0.13	0.00	0.12	0.12
Natural Gas Use	0.10	0.89	0.74	0.01	0.00	0.07	0.07	0.00	0.07	0.07
Total	**6.26**	**10.12**	**22.25**	**0.07**	**5.35**	**0.27**	**5.62**	**1.43**	**0.25**	**1.68**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Table D-A1.2-2 Annual Operational Emissions by Source Category, No Action Alternative

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2026	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	1.1	4.5	12.9	0.0	4.9	0.0	5.0	1.3	0.0	1.4
Consumer Products	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	1.2	1.6	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	0.1	0.9	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**5.6**	**6.6**	**15.3**	**0.1**	**4.9**	**0.2**	**5.1**	**1.3**	**0.2**	**1.5**
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.9	4.0	10.6	0.0	4.7	0.0	4.7	1.2	0.0	1.3
Consumer Products	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	0.9	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**5.5**	**5.6**	**13.1**	**0.1**	**4.7**	**0.1**	**4.8**	**1.2**	**0.1**	**1.3**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.8	3.7	9.0	0.0	4.4	0.0	4.4	1.2	0.0	1.2
Consumer Products	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	0.9	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**5.3**	**5.2**	**11.4**	**0.0**	**4.4**	**0.1**	**4.5**	**1.2**	**0.1**	**1.3**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.6	3.5	6.7	0.0	3.4	0.0	3.4	0.9	0.0	0.9
Consumer Products	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	0.9	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**5.1**	**5.0**	**9.1**	**0.0**	**3.4**	**0.1**	**3.5**	**0.9**	**0.1**	**1.0**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Table D-A1.2-3 Annual Operational Emissions by Source Category, Alternative 1

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2026	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	1.2	5.0	14.3	0.1	5.5	0.0	5.5	1.5	0.0	1.5
Consumer Products	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment(2)	0.1	0.7	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.2	1.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**7.3**	**6.9**	**17.3**	**0.1**	**5.5**	**0.2**	**5.6**	**1.5**	**0.2**	**1.6**
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	1.0	4.4	11.8	0.0	5.2	0.0	5.2	1.4	0.0	1.4
Consumer Products	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.2	1.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**7.1**	**6.0**	**14.8**	**0.1**	**5.2**	**0.1**	**5.3**	**1.4**	**0.1**	**1.5**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.9	4.1	10.0	0.0	4.8	0.0	4.9	1.3	0.0	1.3
Consumer Products	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.2	1.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**6.9**	**5.7**	**13.0**	**0.1**	**4.8**	**0.1**	**5.0**	**1.3**	**0.1**	**1.4**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.6	3.9	7.4	0.0	3.8	0.0	3.8	1.0	0.0	1.0
Consumer Products	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.1	0.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.2	1.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**6.7**	**5.5**	**10.4**	**0.0**	**3.8**	**0.1**	**3.9**	**1.0**	**0.1**	**1.1**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)CalEEMod output for operational equipment was adjusted to reflect all off-road diesel equipment greater than 50 hp meeting Tier 4 standards in all analysis years.

Table D-A1.2-4 Annual Operational Emissions by Source Category, Alternatives 2 through 5, Navy Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2026	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.7	2.9	8.2	0.0	3.2	0.0	3.2	0.8	0.0	0.9
Consumer Products	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment(2)	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.0	0.8	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**4.4**	**4.1**	**9.5**	**0.0**	**3.2**	**0.1**	**3.3**	**0.8**	**0.1**	**1.0**
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.6	2.5	6.8	0.0	3.0	0.0	3.0	0.8	0.0	0.8
Consumer Products	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.0	0.8	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**4.3**	**3.6**	**8.2**	**0.0**	**3.0**	**0.1**	**3.1**	**0.8**	**0.1**	**0.9**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.5	2.3	5.8	0.0	2.9	0.0	2.9	0.8	0.0	0.8
Consumer Products	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.0	0.8	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**4.2**	**3.4**	**7.1**	**0.0**	**2.9**	**0.1**	**2.9**	**0.8**	**0.1**	**0.8**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	0.4	2.2	4.4	0.0	2.3	0.0	2.3	0.6	0.0	0.6
Consumer Products	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.0	0.8	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**4.1**	**3.3**	**5.7**	**0.0**	**2.3**	**0.1**	**2.4**	**0.6**	**0.1**	**0.7**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)CalEEMod output for operational equipment was adjusted to reflect all off-road diesel equipment greater than 50 hp meeting Tier 4 standards in all analysis years.

Table D-A1.2-5 Annual Operational Emissions by Source Category, Alternative 2, Private Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	2.0	8.5	19.4	0.1	7.4	0.0	7.5	2.0	0.0	2.0
Consumer Products	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.0	0.6	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**8.8**	**9.5**	**20.2**	**0.1**	**7.4**	**0.1**	**7.6**	**2.0**	**0.1**	**2.1**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	2.9	14.4	29.5	0.1	12.5	0.1	12.6	3.4	0.1	3.4
Consumer Products	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.2	1.8	1.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**15.2**	**16.2**	**31.0**	**0.1**	**12.5**	**0.2**	**12.7**	**3.4**	**0.2**	**3.6**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	4.9	31.2	47.8	0.2	20.4	0.1	20.4	5.5	0.1	5.5
Consumer Products	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.5	4.0	2.4	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Total	**32.2**	**35.2**	**51.0**	**0.2**	**20.4**	**0.4**	**20.7**	**5.5**	**0.4**	**5.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : (1)Landscaping emissions were calculated outside of CalEEMod.

Table D-A1.2-6 Annual Operational Emissions by Source Category, Alternative 3, Private Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	1.4	5.8	13.4	0.0	5.2	0.0	5.2	1.4	0.0	1.4
Consumer Products	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	0.7	0.4	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**5.9**	**6.5**	**14.0**	**0.1**	**5.2**	**0.1**	**5.3**	**1.4**	**0.1**	**1.5**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	2.0	9.9	20.4	0.1	8.7	0.0	8.8	2.3	0.0	2.4
Consumer Products	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.2	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**10.2**	**11.0**	**21.4**	**0.1**	**8.7**	**0.1**	**8.9**	**2.3**	**0.1**	**2.5**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	3.4	21.6	34.7	0.1	15.4	0.1	15.5	4.1	0.1	4.2
Consumer Products	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.3	2.6	1.6	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Total	**21.6**	**24.3**	**37.0**	**0.2**	**15.4**	**0.3**	**15.7**	**4.1**	**0.3**	**4.4**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note: (1)Landscaping emissions were calculated outside of CalEEMod.

Table D-A1.2-7 Annual Operational Emissions by Source Category, Alternative 4, Private Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	2.6	11.3	25.3	0.1	9.5	0.1	9.6	2.6	0.1	2.6
Consumer Products	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.2	1.4	0.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**12.8**	**12.7**	**26.3**	**0.1**	**9.5**	**0.2**	**9.7**	**2.6**	**0.2**	**2.7**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips(2)	3.8	18.9	37.5	0.1	15.5	0.1	15.5	4.1	0.1	4.2
Consumer Products	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.3	2.6	1.5	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Total	**22.2**	**21.5**	**39.4**	**0.2**	**15.5**	**0.3**	**15.7**	**4.1**	**0.3**	**4.4**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips(1)	6.2	40.7	58.7	0.2	23.4	0.1	23.5	6.3	0.1	6.4
Consumer Products	35.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.7	5.8	3.4	0.0	0.0	0.5	0.5	0.0	0.5	0.5
Total	**46.9**	**46.4**	**62.9**	**0.3**	**23.4**	**0.5**	**24.0**	**6.3**	**0.5**	**6.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-8 Annual Operational Emissions by Source Category, Alternative 5, Private Development

Source Category	*VOC*	NO_x	*CO*	SO_x	*Fugitive* PM_{10}	*Exhaust* PM_{10}	PM_{10}	*Fugitive* $PM_{2.5}$	*Exhaust* $PM_{2.5}$	$PM_{2.5}$
Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips	2.1	9.0	20.1	0.1	7.6	0.1	7.6	2.0	0.0	2.1
Consumer Products	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.1	1.1	0.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Total	**10.1**	**10.1**	**21.0**	**0.1**	**7.6**	**0.1**	**7.7**	**2.0**	**0.1**	**2.2**
Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips(2)	3.1	15.2	30.2	0.1	12.5	0.1	12.6	3.3	0.1	3.4
Consumer Products	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.2	2.1	1.2	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Total	**17.5**	**17.2**	**31.8**	**0.1**	**12.5**	**0.2**	**12.7**	**3.3**	**0.2**	**3.6**
Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Vehicle Trips(1)	5.0	32.8	48.1	0.2	19.6	0.1	19.6	5.2	0.1	5.3
Consumer Products	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.5	4.6	2.7	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	**37.2**	**37.3**	**51.6**	**0.2**	**19.6**	**0.4**	**20.0**	**5.2**	**0.4**	**5.7**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-9 Annual Operational Emissions Interpolated by Year, No Action Alternative

Year [1]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	5.6	6.6	15.3	0.06	5.1	1.5
2027	5.6	6.3	14.7	0.05	5.0	1.4
2028	5.5	6.1	14.2	0.05	4.9	1.4
2029	5.5	5.8	13.6	0.05	4.8	1.4
2030	5.5	5.6	13.1	0.05	4.8	1.3
2031	5.4	5.5	12.7	0.05	4.7	1.3
2032	5.4	5.4	12.4	0.05	4.6	1.3
2033	5.4	5.4	12.1	0.05	4.6	1.3
2034	5.3	5.3	11.7	0.05	4.5	1.3
2035	5.3	5.2	11.4	0.05	4.5	1.3
2036	5.3	5.2	11.3	0.04	4.4	1.2
2037	5.3	5.2	11.1	0.04	4.3	1.2
2038	5.3	5.2	11.0	0.04	4.3	1.2
2039	5.2	5.2	10.8	0.04	4.2	1.2
2040	5.2	5.2	10.6	0.04	4.1	1.2
2041	5.2	5.2	10.5	0.04	4.1	1.2
2042	5.2	5.2	10.3	0.04	4.0	1.1
2043	5.2	5.1	10.2	0.04	4.0	1.1
2044	5.2	5.1	10.0	0.04	3.9	1.1
2045	5.2	5.1	9.9	0.04	3.8	1.1
2046	5.2	5.1	9.7	0.04	3.8	1.1
2047	5.1	5.1	9.6	0.04	3.7	1.1
2048	5.1	5.1	9.4	0.04	3.6	1.0
2049	5.1	5.1	9.3	0.04	3.6	1.0
2050	5.1	5.0	9.1	0.04	3.5	1.0
Maximum	**5.6**	**6.6**	**15.3**	**0.06**	**5.1**	**1.5**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [1]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly. Emissions before 2026 were interpolated between 2020 existing conditions and 2026.

Table D-A1.2-10 Annual Operational Emissions Interpolated by Year, Alternative 1

Year [1]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	7.27	6.91	17.27	0.06	5.63	1.62
2027	7.22	6.69	16.65	0.06	5.54	1.59
2028	7.17	6.47	16.04	0.06	5.45	1.56
2029	7.12	6.25	15.42	0.06	5.37	1.53
2030	7.07	6.03	14.81	0.06	5.28	1.50
2031	7.04	5.96	14.44	0.06	5.22	1.49
2032	7.00	5.89	14.08	0.05	5.15	1.47
2033	6.97	5.82	13.71	0.05	5.09	1.45
2034	6.94	5.75	13.35	0.05	5.03	1.43
2035	6.90	5.68	12.98	0.05	4.96	1.41
2036	6.89	5.66	12.81	0.05	4.89	1.39
2037	6.87	5.65	12.64	0.05	4.82	1.37
2038	6.86	5.63	12.47	0.05	4.75	1.35
2039	6.85	5.62	12.30	0.05	4.67	1.33
2040	6.83	5.60	12.13	0.05	4.60	1.31
2041	6.82	5.59	11.96	0.05	4.53	1.29
2042	6.80	5.57	11.79	0.05	4.46	1.27
2043	6.79	5.56	11.62	0.05	4.38	1.26
2044	6.78	5.55	11.45	0.05	4.31	1.24
2045	6.76	5.53	11.28	0.05	4.24	1.22
2046	6.75	5.52	11.11	0.04	4.17	1.20
2047	6.74	5.50	10.94	0.04	4.10	1.18
2048	6.72	5.49	10.76	0.04	4.02	1.16
2049	6.71	5.47	10.59	0.04	3.95	1.14
2050	6.69	5.46	10.42	0.04	3.88	1.12
Maximum	**7.27**	**6.91**	**17.27**	**0.06**	**5.63**	**1.62**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [1]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly. Emissions before 2026 were assumed to be equal to the No Action Alternative.

Table D-A1.2-11 Annual Operational Emissions Interpolated by Year, Alternatives 2 through 5, Navy Development

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	4.40	4.05	9.53	0.04	3.26	0.95
2027	4.37	3.95	9.19	0.04	3.23	0.94
2028	4.34	3.84	8.86	0.04	3.19	0.93
2029	4.32	3.74	8.52	0.03	3.15	0.91
2030	4.29	3.63	8.19	0.03	3.12	0.90
2031	4.27	3.59	7.98	0.03	3.08	0.89
2032	4.25	3.55	7.77	0.03	3.05	0.88
2033	4.23	3.51	7.56	0.03	3.01	0.87
2034	4.21	3.47	7.35	0.03	2.97	0.86
2035	4.19	3.43	7.14	0.03	2.94	0.85
2036	4.19	3.42	7.04	0.03	2.90	0.84
2037	4.18	3.41	6.95	0.03	2.86	0.83
2038	4.17	3.41	6.86	0.03	2.83	0.82
2039	4.16	3.40	6.77	0.03	2.79	0.81
2040	4.15	3.39	6.67	0.03	2.75	0.80
2041	4.15	3.38	6.58	0.03	2.71	0.79
2042	4.14	3.38	6.49	0.03	2.68	0.78
2043	4.13	3.37	6.39	0.03	2.64	0.77
2044	4.12	3.36	6.30	0.03	2.60	0.76
2045	4.12	3.35	6.21	0.03	2.56	0.75
2046	4.11	3.35	6.11	0.03	2.52	0.74
2047	4.10	3.34	6.02	0.03	2.49	0.73
2048	4.09	3.33	5.93	0.03	2.45	0.72
2049	4.09	3.32	5.83	0.03	2.41	0.71
2050	4.08	3.32	5.74	0.03	2.37	0.70
Maximum	**4.40**	**4.05**	**9.53**	**0.04**	**3.26**	**0.95**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [(1)]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly. Emissions before 2026 were assumed to be equal to the No Action Alternative.

Table D-A1.2-12 Annual Operational Emissions Interpolated by Year, Alternative 2, Private Development

Year (1)	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	2.9	3.2	6.7	0.03	2.5	0.7
2029	5.9	6.3	13.5	0.05	5.0	1.4
2030	8.8	9.5	20.2	0.08	7.6	2.1
2031	10.1	10.9	22.3	0.09	8.6	2.4
2032	11.4	12.2	24.5	0.10	9.6	2.7
2033	12.7	13.5	26.6	0.10	10.7	3.0
2034	13.9	14.9	28.8	0.11	11.7	3.3
2035	15.2	16.2	31.0	0.12	12.7	3.6
2036	16.3	17.5	32.3	0.13	13.3	3.7
2037	17.5	18.8	33.6	0.14	13.8	3.9
2038	18.6	20.0	35.0	0.14	14.3	4.0
2039	19.7	21.3	36.3	0.15	14.9	4.2
2040	20.9	22.5	37.6	0.15	15.4	4.3
2041	22.0	23.8	39.0	0.16	15.9	4.5
2042	23.1	25.1	40.3	0.17	16.5	4.6
2043	24.3	26.3	41.6	0.17	17.0	4.8
2044	25.4	27.6	43.0	0.18	17.5	4.9
2045	26.5	28.9	44.3	0.18	18.1	5.1
2046	27.6	30.1	45.7	0.19	18.6	5.2
2047	28.8	31.4	47.0	0.20	19.1	5.4
2048	29.9	32.6	48.3	0.20	19.7	5.5
2049	31.0	33.9	49.7	0.21	20.2	5.7
2050	32.2	35.2	51.0	0.21	20.7	5.8
Maximum	**32.2**	**35.2**	**51.0**	**0.21**	**20.7**	**5.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : (1)Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

Table D-A1.2-13 Annual Operational Emissions Interpolated by Year, Alternative 3, Private Development

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	2.0	2.2	4.7	0.02	1.8	0.5
2029	3.9	4.3	9.3	0.04	3.5	1.0
2030	5.9	6.5	14.0	0.05	5.3	1.5
2031	6.8	7.4	15.5	0.06	6.0	1.7
2032	7.6	8.3	16.9	0.07	6.7	1.9
2033	8.5	9.2	18.4	0.07	7.4	2.1
2034	9.3	10.1	19.9	0.08	8.2	2.3
2035	10.2	11.0	21.4	0.09	8.9	2.5
2036	11.0	11.9	22.5	0.09	9.3	2.6
2037	11.7	12.8	23.5	0.09	9.8	2.7
2038	12.5	13.7	24.5	0.10	10.2	2.9
2039	13.2	14.6	25.6	0.10	10.7	3.0
2040	14.0	15.4	26.6	0.11	11.2	3.1
2041	14.8	16.3	27.7	0.11	11.6	3.2
2042	15.5	17.2	28.7	0.12	12.1	3.4
2043	16.3	18.1	29.7	0.12	12.5	3.5
2044	17.0	19.0	30.8	0.13	13.0	3.6
2045	17.8	19.9	31.8	0.13	13.4	3.8
2046	18.6	20.7	32.8	0.14	13.9	3.9
2047	19.3	21.6	33.9	0.14	14.3	4.0
2048	20.1	22.5	34.9	0.15	14.8	4.1
2049	20.8	23.4	36.0	0.15	15.2	4.3
2050	21.6	24.3	37.0	0.16	15.7	4.4
Maximum	**21.6**	**24.3**	**37.0**	**0.16**	**15.7**	**4.4**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [(1)]Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

Table D-A1.2-14 Annual Operational Emissions Interpolated by Year, Alternative 4, Private Development

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	4.3	4.2	8.8	0.03	3.2	0.9
2029	8.5	8.5	17.5	0.07	6.5	1.8
2030	12.8	12.7	26.3	0.10	9.7	2.7
2031	14.7	14.5	28.9	0.11	10.9	3.1
2032	16.5	16.2	31.6	0.12	12.1	3.4
2033	18.4	18.0	34.2	0.13	13.3	3.7
2034	20.3	19.8	36.8	0.14	14.5	4.1
2035	22.2	21.5	39.4	0.16	15.7	4.4
2036	23.8	23.2	41.0	0.16	16.3	4.6
2037	25.5	24.8	42.6	0.17	16.8	4.7
2038	27.1	26.5	44.1	0.18	17.4	4.9
2039	28.8	28.2	45.7	0.18	17.9	5.1
2040	30.4	29.8	47.3	0.19	18.5	5.2
2041	32.1	31.5	48.8	0.20	19.0	5.4
2042	33.7	33.1	50.4	0.20	19.6	5.5
2043	35.4	34.8	51.9	0.21	20.1	5.7
2044	37.0	36.5	53.5	0.22	20.7	5.9
2045	38.7	38.1	55.1	0.22	21.2	6.0
2046	40.3	39.8	56.6	0.23	21.8	6.2
2047	42.0	41.5	58.2	0.24	22.3	6.3
2048	43.6	43.1	59.8	0.25	22.9	6.5
2049	45.3	44.8	61.3	0.25	23.4	6.6
2050	46.9	46.4	62.9	0.26	24.0	6.8
Maximum	**46.9**	**46.4**	**62.9**	**0.26**	**24.0**	**6.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [(1)]Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

[(2)]Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-15 Annual Operational Emissions Interpolated by Year, Alternative 5, Private Development

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*PM_{10} (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	3.4	3.4	7.0	0.03	2.6	0.7
2029	6.7	6.8	14.0	0.05	5.1	1.4
2030	10.1	10.1	21.0	0.08	7.7	2.2
2031	11.6	11.5	23.1	0.09	8.7	2.4
2032	13.1	13.0	25.3	0.10	9.7	2.7
2033	14.6	14.4	27.4	0.11	10.7	3.0
2034	16.1	15.8	29.6	0.12	11.7	3.3
2035	17.5	17.2	31.8	0.13	12.7	3.6
2036	18.8	18.6	33.1	0.13	13.2	3.7
2037	20.2	19.9	34.4	0.14	13.7	3.8
2038	21.5	21.2	35.7	0.14	14.2	4.0
2039	22.8	22.6	37.1	0.15	14.7	4.1
2040	24.1	23.9	38.4	0.16	15.2	4.3
2041	25.4	25.3	39.7	0.16	15.6	4.4
2042	26.7	26.6	41.0	0.17	16.1	4.5
2043	28.0	28.0	42.3	0.17	16.6	4.7
2044	29.3	29.3	43.7	0.18	17.1	4.8
2045	30.6	30.6	45.0	0.18	17.6	5.0
2046	31.9	32.0	46.3	0.19	18.1	5.1
2047	33.2	33.3	47.6	0.20	18.5	5.2
2048	34.6	34.7	48.9	0.20	19.0	5.4
2049	35.9	36.0	50.3	0.21	19.5	5.5
2050	37.2	37.3	51.6	0.21	20.0	5.7
Maximum	**37.2**	**37.3**	**51.6**	**0.21**	**20.0**	**5.7**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Note : [(1)]Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

[(2)]Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-16 Annual Operational Emissions, Alternatives 4 and 5, Transit Center Total Vehicle Trips

Year	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2035	0.5	2.2	5.5	0.0	2.7	0.01	2.7	0.7	0.01	0.7
2050	0.4	2.4	5.2	0.0	2.9	0.01	2.9	0.8	0.01	0.8

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Table D-A1.2-17 Annual Operational Emissions, Alternatives 4 and 5, Transit Center New Vehicle Trips Relative to Existing Conditions

Year	*VOC (ton/yr)*	*NO_x (ton/yr)*	*CO (ton/yr)*	*SO_x (ton/yr)*	*Fugitive PM_{10} (ton/yr)*	*Exhaust PM_{10} (ton/yr)*	*PM_{10} (ton/yr)*	*Fugitive $PM_{2.5}$ (ton/yr)*	*Exhaust $PM_{2.5}$ (ton/yr)*	*$PM_{2.5}$ (ton/yr)*
2035	0.0	0.2	0.4	0.0	0.2	0.00	0.2	0.1	0.00	0.1
2050	0.1	0.3	0.7	0.0	0.4	0.00	0.4	0.1	0.00	0.1

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year.

Table D-A1.2-18 Emissions Adjustment for Operational Tier 4 Diesel Standby Engines, Navy Development, Alternatives 1-5, All Analysis Years

Description	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
CalEEMod Default Emission Factors	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**
Emergency Generator (100 - 175 HP)	1.0	2.85	3.7	0.005	0.15	0.15
Fire Pump (175 - 300 HP)	1.0	2.85	2.6	0.005	0.15	0.15
Tier 4 Emission Standards[1]	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**	**(g/hp-hr)**
Emergency Generator (100 - 175 HP)	0.14	0.30	3.7	--[2]	0.015	0.015
Fire Pump (175 - 300 HP)	0.14	0.30	2.6	--[2]	0.015	0.015
Emission Adjustment Factors[3]	**(unitless)**	**(unitless)**	**(unitless)**	**(unitless)**	**(unitless)**	**(unitless)**
Emergency Generator (100 - 175 HP)	0.14	0.11	1.00	1.00	0.10	0.10
Fire Pump (175 - 300 HP)	0.14	0.11	1.00	1.00	0.10	0.10
CalEEMod Default Annual Emissions	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emergency Generator (100 - 175 HP)	0.0027	0.0076	0.0098	0.00001	0.0004	0.0004
Fire Pump (175 - 300 HP)	0.0031	0.0086	0.0078	0.00001	0.0005	0.0005
Adjusted Annual Emissions[4]	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emergency Generator (100 - 175 HP)	0.0004	0.0008	0.0098	0.00001	0.00004	0.00004
Fire Pump (175 - 300 HP)	0.0004	0.0009	0.0078	0.00001	0.00005	0.00005
Total	**0.0008**	**0.0017**	**0.0177**	**0.00002**	**0.0001**	**0.0001**
CalEEMod Default Peak Daily Emissions	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emergency Generator (100 - 175 HP)	1.35	3.78	4.91	0.01	0.20	0.20
Fire Pump (175 - 300 HP)	1.53	4.29	3.91	0.01	0.23	0.23
Adjusted Peak Daily Emissions[4]	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emergency Generator (100 - 175 HP)	0.19	0.40	4.91	0.01	0.02	0.02
Fire Pump (175 - 300 HP)	0.21	0.45	3.91	0.01	0.02	0.02
Total	**0.40**	**0.85**	**8.83**	**0.01**	**0.04**	**0.04**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; HP = horsepower; g/hp-hr = grams per horsepower-hour; ton/yr = tons per year; lb/day = pounds per day.

Notes : [1]Source: Tier 4 Emission Standards. https://dieselnet.com/standards/us/nonroad.php#tier4. Website accessed June 20, 2020.

[2]No standard.

[3]Adjustment Factor = Tier 4 Emission Standard / CalEEMod Default Emission Factor. Assume an adjustment factor of 1 for SO_x.

[4]Adjusted Emissions = Adjustment Factor x CalEEMod Default Emission. Emissions replace CalEEMod output.

Table D-A1.2-19 Emissions Adjustment for Operational Tier 4 Mobile Equipment, Navy Development, Alternative 1

Description [(1)(2)]	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Annual Emissions, Year 2026	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0538	0.5035	0.7085	0.0010	0.0259	0.0241
Emissions with Tier 4 engines	0.0119	0.0517	0.7359	0.0010	0.0016	0.0016
Emissions Change[(3)]	**-0.0419**	**-0.4518**	**0.0274**	**0.0000**	**-0.0243**	**-0.0225**
Annual Emissions, Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0525	0.3125	0.7383	0.0012	0.0046	0.0046
Emissions with Tier 4 engines	0.0119	0.0517	0.7359	0.0012	0.0016	0.0016
Emissions Change	**-0.0406**	**-0.2608**	**-0.0024**	**0.0000**	**-0.0031**	**-0.0031**
Annual Emissions, Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0505	0.2960	0.7362	0.0012	0.0032	0.0032
Emissions with Tier 4 engines	0.0119	0.0517	0.7359	0.0012	0.0016	0.0016
Emissions Change	**-0.0386**	**-0.2443**	**-0.0003**	**0.0000**	**-0.0016**	**-0.0016**
Annual Emissions, Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0505	0.2933	0.7372	0.0012	0.0030	0.0030
Emissions with Tier 4 engines	0.0119	0.0517	0.7359	0.0012	0.0016	0.0016
Emissions Change	**-0.0386**	**-0.2416**	**-0.0013**	**0.0000**	**-0.0015**	**-0.0015**
Peak Daily Emissions, Year 2026	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.4142	3.8730	5.4499	0.0078	0.1991	0.1851
Emissions with Tier 4 engines	0.0918	0.3978	5.6604	0.0078	0.0122	0.0122
Emissions Change	**-0.3224**	**-3.4752**	**0.2105**	**0.0000**	**-0.1869**	**-0.1729**
Peak Daily Emissions, Year 2030	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.4042	2.4036	5.6795	0.0092	0.0357	0.0357
Emissions with Tier 4 engines	0.0918	0.3978	5.6604	0.0092	0.0122	0.0122
Emissions Change	**-0.3124**	**-2.0058**	**-0.0191**	**0.0000**	**-0.0235**	**-0.0235**
Peak Daily Emissions, Year 2035	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.3881	2.2770	5.6627	0.0092	0.0245	0.0245
Emissions with Tier 4 engines	0.0918	0.3978	5.6604	0.0092	0.0122	0.0122
Emissions Change	**-0.2963**	**-1.8792**	**-0.0023**	**0.0000**	**-0.0123**	**-0.0123**
Peak Daily Emissions, Year 2050	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.3883	2.2558	5.6710	0.0092	0.0234	0.0234
Emissions with Tier 4 engines	0.0918	0.3978	5.6604	0.0092	0.0122	0.0122
Emissions Change	**-0.2965**	**-1.8580**	**-0.0106**	**0.0000**	**-0.0112**	**-0.0112**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year; lb/day = pounds per day.

Notes : [(1)]Emissions were calculated in CalEEMod. The sources subject to the Tier 4 measure that were modeled in CalEEMod are 4 diesel forklifts operating 8 hr/day and 260 days per year, and 1 diesel generator set operating 2 hr/day and 260 days per year. CalEEMod default horsepower and load factors were modeled.

[(2)]Although the equipment is for operations, they were modeled in CalEEMod as construction equipment to quantify the effectiveness of the Tier 4 measure.

[(3)]The emissions change is added to the CalEEMod output.

Table D-A1.2-20 Emissions Adjustment for Operational Tier 4 Mobile Equipment, Navy Development, Alternatives 2-5

Description (1)(2)	*VOC*	*NO_x*	*CO*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Annual Emissions, Year 2026	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0113	0.1064	0.1474	0.0002	0.0057	0.0052
Emissions with Tier 4 engines	0.0025	0.0106	0.1510	0.0002	0.0003	0.0003
Emissions Change(3)	**-0.0089**	**-0.0958**	**0.0036**	**0.0000**	**-0.0054**	**-0.0049**
Annual Emissions, Year 2030	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0116	0.0635	0.1550	0.0002	0.0009	0.0009
Emissions with Tier 4 engines	0.0025	0.0106	0.1510	0.0002	0.0003	0.0003
Emissions Change	**-0.0092**	**-0.0529**	**-0.0040**	**0.0000**	**-0.0005**	**-0.0005**
Annual Emissions, Year 2035	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0112	0.0610	0.1546	0.0002	0.0007	0.0007
Emissions with Tier 4 engines	0.0025	0.0106	0.1510	0.0002	0.0003	0.0003
Emissions Change	**-0.0088**	**-0.0504**	**-0.0036**	**0.0000**	**-0.0003**	**-0.0003**
Annual Emissions, Year 2050	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**	**(ton/yr)**
Emissions with default engine tiers	0.0113	0.0609	0.1548	0.0002	0.0007	0.0007
Emissions with Tier 4 engines	0.0025	0.0106	0.1510	0.0002	0.0003	0.0003
Emissions Change	**-0.0089**	**-0.0503**	**-0.0038**	**0.0000**	**-0.0003**	**-0.0003**
Peak Daily Emissions, Year 2026	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.0869	0.8185	1.1338	0.0015	0.0438	0.0403
Emissions with Tier 4 engines	0.0188	0.0816	1.1616	0.0015	0.0025	0.0025
Emissions Change	**-0.0681**	**-0.7369**	**0.0278**	**0.0000**	**-0.0413**	**-0.0378**
Peak Daily Emissions, Year 2030	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.0888	0.4882	1.1927	0.0019	0.0066	0.0066
Emissions with Tier 4 engines	0.0188	0.0816	1.1616	0.0019	0.0025	0.0025
Emissions Change	**-0.0700**	**-0.4066**	**-0.0311**	**0.0000**	**-0.0041**	**-0.0041**
Peak Daily Emissions, Year 2035	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.0863	0.4693	1.1889	0.0019	0.0050	0.0050
Emissions with Tier 4 engines	0.0188	0.0816	1.1616	0.0019	0.0025	0.0025
Emissions Change	**-0.0675**	**-0.3877**	**-0.0273**	**0.0000**	**-0.0025**	**-0.0025**
Peak Daily Emissions, Year 2050	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Emissions with default engine tiers	0.0867	0.4681	1.1911	0.0019	0.0050	0.0050
Emissions with Tier 4 engines	0.0188	0.0816	1.1616	0.0019	0.0025	0.0025
Emissions Change	**-0.0679**	**-0.3865**	**-0.0295**	**0.0000**	**-0.0025**	**-0.0025**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; ton/yr = tons per year; lb/day = pounds per day.

Notes : (1)Emissions were calculated in CalEEMod. The source subject to the Tier 4 measure that was modeled in CalEEMod consists of 1 diesel forklift operating 8 hours per day and 260 days per year. CalEEMod default horsepower and load factor were modeled.

(2)Although the equipment is for operations, it was modeled in CalEEMod as construction equipment to quantify the effectiveness of the Tier 4 measure.

(3)The emissions change is added to the CalEEMod output.

Table D-A1.2-21 Annual Operational HAP Emissions by Source Category, 2020 Existing Conditions (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Vehicle Trips	2.73E-02	1.21E-02	3.94E-02	1.49E-04	5.84E-02	7.74E-03	4.52E-05	2.10E-06	2.46E-05	3.49E-04	1.81E-05	6.11E-03	1.91E-05	2.72E-02	0.00E+00	7.91E-07	1.02E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	9.17E-02	0.00E+00	0.00E+00
Architectural Coating	1.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	2.08E-02	0.00E+00	3.71E-03	0.00E+00	1.11E-02	4.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-04	0.00E+00	5.80E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00
Total	**6.66E-02**	**1.21E-02**	**4.32E-02**	**1.49E-04**	**7.87E-02**	**8.17E-03**	**4.52E-05**	**2.10E-06**	**2.46E-05**	**3.49E-04**	**1.81E-05**	**1.42E-02**	**1.91E-05**	**1.07E-01**	**9.17E-02**	**7.91E-07**	**1.02E-04**

Table D-A1.2-21 Annual Operational HAP Emissions by Source Category, 2020 Existing Conditions (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
Vehicle Trips	1.49E-03	0.00E+00	1.32E-04	1.37E-03	4.84E-03	1.52E-05	4.32E-04	3.65E-03	6.34E-02	0.00E+00	0.00E+00	9.04E-02	0.00E+00	2.15E-02	4.88E-03	3.85E-06	3.79E-05
Consumer Products	2.59E-02	4.98E-04	1.30E-02	0.00E+00	4.44E-02	1.99E-02	0.00E+00	0.00E+00	1.82E-01	1.40E-02	4.29E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.42E-03	0.00E+00	1.79E-02	6.79E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.34E-03	0.00E+00	7.48E-03	0.00E+00	0.00E+00	1.59E-03	0.00E+00	2.33E-03	0.00E+00	0.00E+00	9.42E-06
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.36E-02**	**4.98E-04**	**1.31E-02**	**1.37E-03**	**4.92E-02**	**1.99E-02**	**7.44E-03**	**3.65E-03**	**2.80E-01**	**1.40E-02**	**4.29E-02**	**9.55E-02**	**1.45E-02**	**4.18E-02**	**1.17E-02**	**3.85E-06**	**4.74E-05**

Table D-A1.2-21 Annual Operational HAP Emissions by Source Category, 2020 Existing Conditions (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/ fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Vehicle Trips	3.17E-06	6.58E-06	5.86E-05	4.15E-06	2.58E-06	2.47E-06	2.86E-06	0.00E+00	9.40E-07	0.00E+00	0.00E+00	0.00E+00	2.76E-03	3.00E-06	1.76E-06	9.04E-02	3.74E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-01	4.52E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	9.36E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	2.64E-07	3.85E-06	0.00E+00	2.67E-06	6.60E-07	1.32E-06	7.44E-06	9.24E-07	1.19E-06	0.00E+00	1.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.80E-02	1.11E-01
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.37E-05	0.00E+00	0.00E+00	1.35E-05	0.00E+00	6.07E-05	2.02E-05	4.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	3.12E-02
Total	**3.44E-06**	**1.05E-05**	**5.86E-05**	**4.05E-05**	**3.25E-06**	**3.80E-06**	**2.38E-05**	**9.30E-07**	**6.28E-05**	**2.02E-05**	**4.22E-05**	**0.00E+00**	**2.76E-03**	**3.00E-06**	**1.76E-06**	**2.80E-01**	**1.06E+00**

Table D-A1.2-22 Annual Operational HAP Emissions by Source Category, No Action Alternative (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2026																	
Vehicle Trips	1.82E-02	8.05E-03	2.62E-02	9.90E-05	3.89E-02	5.15E-03	3.01E-05	1.40E-06	1.63E-05	2.32E-04	1.20E-05	4.07E-03	1.27E-05	1.81E-02	0.00E+00	5.27E-07	6.77E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	9.17E-02	0.00E+00	0.00E+00
Architectural Coating	1.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.26E-02	0.00E+00	2.25E-03	0.00E+00	6.72E-03	2.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-04	0.00E+00	3.53E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.93E-02**	**8.05E-03**	**2.86E-02**	**9.90E-05**	**5.48E-02**	**5.41E-03**	**3.01E-05**	**1.40E-06**	**1.63E-05**	**2.32E-04**	**1.20E-05**	**1.18E-02**	**1.27E-05**	**7.53E-02**	**9.17E-02**	**5.27E-07**	**6.77E-05**
Year 2030																	
Vehicle Trips	1.52E-02	6.73E-03	2.19E-02	8.27E-05	3.25E-02	4.30E-03	2.52E-05	1.17E-06	1.37E-05	1.94E-04	1.01E-05	3.40E-03	1.06E-05	1.51E-02	0.00E+00	4.40E-07	5.66E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	9.17E-02	0.00E+00	0.00E+00
Architectural Coating	1.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.26E-02	0.00E+00	2.26E-03	0.00E+00	6.73E-03	2.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.18E-04	0.00E+00	3.53E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.63E-02**	**6.73E-03**	**2.43E-02**	**8.27E-05**	**4.84E-02**	**4.57E-03**	**2.52E-05**	**1.17E-06**	**1.37E-05**	**1.94E-04**	**1.01E-05**	**1.12E-02**	**1.06E-05**	**7.24E-02**	**9.17E-02**	**4.40E-07**	**5.66E-05**
Year 2035																	
Vehicle Trips	1.27E-02	5.61E-03	1.83E-02	6.90E-05	2.71E-02	3.59E-03	2.10E-05	9.76E-07	1.14E-05	1.62E-04	8.40E-06	2.83E-03	8.83E-06	1.26E-02	0.00E+00	3.67E-07	4.72E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	9.17E-02	0.00E+00	0.00E+00
Architectural Coating	1.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.22E-02	0.00E+00	2.18E-03	0.00E+00	6.51E-03	2.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.01E-04	0.00E+00	3.42E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.34E-02**	**5.61E-03**	**2.06E-02**	**6.90E-05**	**4.28E-02**	**3.85E-03**	**2.10E-05**	**9.76E-07**	**1.14E-05**	**1.62E-04**	**8.40E-06**	**1.06E-02**	**8.83E-06**	**6.87E-02**	**9.17E-02**	**3.67E-07**	**4.72E-05**
Year 2050																	
Vehicle Trips	9.57E-03	4.24E-03	1.38E-02	5.21E-05	2.05E-02	2.71E-03	1.58E-05	7.37E-07	8.61E-06	1.22E-04	6.34E-06	2.14E-03	6.67E-06	9.52E-03	0.00E+00	2.77E-07	3.57E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	9.17E-02	0.00E+00	0.00E+00
Architectural Coating	1.79E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.22E-02	0.00E+00	2.19E-03	0.00E+00	6.53E-03	2.45E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-04	0.00E+00	3.42E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.03E-02**	**4.24E-03**	**1.61E-02**	**5.21E-05**	**3.62E-02**	**2.97E-03**	**1.58E-05**	**7.37E-07**	**8.61E-06**	**1.22E-04**	**6.34E-06**	**9.91E-03**	**6.67E-06**	**6.57E-02**	**9.17E-02**	**2.77E-07**	**3.57E-05**

Table D-A1.2-22 Annual Operational HAP Emissions by Source Category, No Action Alternative (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
Year 2026																	
Vehicle Trips	9.92E-04	0.00E+00	8.80E-05	9.12E-04	3.22E-03	1.01E-05	2.87E-04	2.43E-03	4.22E-02	0.00E+00	0.00E+00	6.01E-02	0.00E+00	1.43E-02	3.25E-03	2.56E-06	2.24E-05
Consumer Products	2.59E-02	4.98E-04	1.30E-02	0.00E+00	4.44E-02	1.99E-02	0.00E+00	0.00E+00	1.82E-01	1.40E-02	4.29E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.42E-03	0.00E+00	1.79E-02	6.79E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03	0.00E+00	4.55E-03	0.00E+00	0.00E+00	9.68E-04	0.00E+00	1.42E-03	0.00E+00	0.00E+00	4.29E-06
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.31E-02**	**4.98E-04**	**1.30E-02**	**9.12E-04**	**4.76E-02**	**1.99E-02**	**5.59E-03**	**2.43E-03**	**2.55E-01**	**1.40E-02**	**4.29E-02**	**6.46E-02**	**1.45E-02**	**3.37E-02**	**1.00E-02**	**2.56E-06**	**2.68E-05**
Year 2030																	
Vehicle Trips	8.29E-04	0.00E+00	7.35E-05	7.63E-04	2.69E-03	8.47E-06	2.40E-04	2.03E-03	3.53E-02	0.00E+00	0.00E+00	5.03E-02	0.00E+00	1.20E-02	2.71E-03	2.14E-06	1.63E-05
Consumer Products	2.59E-02	4.98E-04	1.30E-02	0.00E+00	4.44E-02	1.99E-02	0.00E+00	0.00E+00	1.82E-01	1.40E-02	4.29E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.42E-03	0.00E+00	1.79E-02	6.79E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03	0.00E+00	4.55E-03	0.00E+00	0.00E+00	9.69E-04	0.00E+00	1.42E-03	0.00E+00	0.00E+00	6.98E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.29E-02**	**4.98E-04**	**1.30E-02**	**7.63E-04**	**4.70E-02**	**1.99E-02**	**5.55E-03**	**2.03E-03**	**2.49E-01**	**1.40E-02**	**4.29E-02**	**5.47E-02**	**1.45E-02**	**3.13E-02**	**9.51E-03**	**2.14E-06**	**1.71E-05**
Year 2035																	
Vehicle Trips	6.92E-04	0.00E+00	6.13E-05	6.36E-04	2.24E-03	7.06E-06	2.00E-04	1.69E-03	2.94E-02	0.00E+00	0.00E+00	4.19E-02	0.00E+00	9.97E-03	2.26E-03	1.78E-06	1.15E-05
Consumer Products	2.59E-02	4.98E-04	1.30E-02	0.00E+00	4.44E-02	1.99E-02	0.00E+00	0.00E+00	1.82E-01	1.40E-02	4.29E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.42E-03	0.00E+00	1.79E-02	6.79E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-03	0.00E+00	4.40E-03	0.00E+00	0.00E+00	9.37E-04	0.00E+00	1.37E-03	0.00E+00	0.00E+00	5.07E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.28E-02**	**4.98E-04**	**1.30E-02**	**6.36E-04**	**4.66E-02**	**1.99E-02**	**5.42E-03**	**1.69E-03**	**2.42E-01**	**1.40E-02**	**4.29E-02**	**4.63E-02**	**1.45E-02**	**2.93E-02**	**9.05E-03**	**1.78E-06**	**1.21E-05**
Year 2050																	
Vehicle Trips	5.22E-04	0.00E+00	4.63E-05	4.80E-04	1.70E-03	5.33E-06	1.51E-04	1.28E-03	2.22E-02	0.00E+00	0.00E+00	3.17E-02	0.00E+00	7.53E-03	1.71E-03	1.35E-06	6.55E-06
Consumer Products	2.59E-02	4.98E-04	1.30E-02	0.00E+00	4.44E-02	1.99E-02	0.00E+00	0.00E+00	1.82E-01	1.40E-02	4.29E-02	0.00E+00	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	2.21E-02	0.00E+00	0.00E+00	3.42E-03	0.00E+00	1.79E-02	6.79E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-03	0.00E+00	4.42E-03	0.00E+00	0.00E+00	9.40E-04	0.00E+00	1.38E-03	0.00E+00	0.00E+00	4.97E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.26E-02**	**4.98E-04**	**1.30E-02**	**4.80E-04**	**4.60E-02**	**1.99E-02**	**5.38E-03**	**1.28E-03**	**2.35E-01**	**1.40E-02**	**4.29E-02**	**3.61E-02**	**1.45E-02**	**2.69E-02**	**8.50E-03**	**1.35E-06**	**7.11E-06**

Table D-A1.2-22 Annual Operational HAP Emissions by Source Category, No Action Alternative (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2026																	
Vehicle Trips	1.87E-06	3.88E-06	3.46E-05	2.45E-06	1.53E-06	1.46E-06	1.69E-06	0.00E+00	5.55E-07	0.00E+00	0.00E+00	0.00E+00	1.63E-03	1.77E-06	1.04E-06	6.01E-02	2.49E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-01	4.52E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	9.36E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.20E-07	1.75E-06	0.00E+00	1.21E-06	3.01E-07	6.01E-07	3.39E-06	4.21E-07	5.41E-07	0.00E+00	4.93E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-02	6.72E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.37E-05	0.00E+00	0.00E+00	1.35E-05	0.00E+00	6.07E-05	2.02E-05	4.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	3.12E-02
Total	**1.99E-06**	**5.66E-06**	**3.46E-05**	**3.74E-05**	**1.83E-06**	**2.07E-06**	**1.86E-05**	**4.27E-07**	**6.18E-05**	**2.02E-05**	**4.16E-05**	**0.00E+00**	**1.63E-03**	**1.77E-06**	**1.04E-06**	**2.55E-01**	**8.95E-01**
Year 2030																	
Vehicle Trips	1.37E-06	2.83E-06	2.53E-05	1.79E-06	1.11E-06	1.06E-06	1.23E-06	0.00E+00	4.05E-07	0.00E+00	0.00E+00	0.00E+00	1.19E-03	1.29E-06	7.58E-07	5.03E-02	2.08E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-01	4.52E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	9.36E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.96E-08	2.86E-07	0.00E+00	1.98E-07	4.89E-08	9.78E-08	5.52E-07	6.85E-08	8.80E-08	0.00E+00	8.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-02	6.73E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.37E-05	0.00E+00	0.00E+00	1.35E-05	0.00E+00	6.07E-05	2.02E-05	4.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	3.12E-02
Total	**1.39E-06**	**3.14E-06**	**2.53E-05**	**3.57E-05**	**1.17E-06**	**1.17E-06**	**1.53E-05**	**7.44E-08**	**6.12E-05**	**2.02E-05**	**4.12E-05**	**0.00E+00**	**1.19E-03**	**1.29E-06**	**7.58E-07**	**2.49E-01**	**8.54E-01**
Year 2035																	
Vehicle Trips	9.65E-07	2.00E-06	1.78E-05	1.26E-06	7.86E-07	7.51E-07	8.69E-07	0.00E+00	2.86E-07	0.00E+00	0.00E+00	0.00E+00	8.39E-04	9.12E-07	5.35E-07	4.19E-02	1.73E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-01	4.52E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	9.36E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.42E-08	2.07E-07	0.00E+00	1.43E-07	3.55E-08	7.10E-08	4.00E-07	4.97E-08	6.39E-08	0.00E+00	5.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.42E-02	6.51E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.37E-05	0.00E+00	0.00E+00	1.35E-05	0.00E+00	6.07E-05	2.02E-05	4.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	3.12E-02
Total	**9.81E-07**	**2.23E-06**	**1.78E-05**	**3.51E-05**	**8.26E-07**	**8.30E-07**	**1.48E-05**	**5.57E-08**	**6.10E-05**	**2.02E-05**	**4.12E-05**	**0.00E+00**	**8.39E-04**	**9.12E-07**	**5.35E-07**	**2.42E-01**	**8.18E-01**
Year 2050																	
Vehicle Trips	5.48E-07	1.14E-06	1.01E-05	7.17E-07	4.46E-07	4.26E-07	4.93E-07	0.00E+00	1.62E-07	0.00E+00	0.00E+00	0.00E+00	4.76E-04	5.17E-07	3.04E-07	3.17E-02	1.30E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-01	4.52E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	9.36E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.39E-08	2.03E-07	0.00E+00	1.41E-07	3.48E-08	6.96E-08	3.93E-07	4.87E-08	6.26E-08	0.00E+00	5.71E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.42E-02	6.52E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.37E-05	0.00E+00	0.00E+00	1.35E-05	0.00E+00	6.07E-05	2.02E-05	4.11E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-02	3.12E-02
Total	**5.63E-07**	**1.36E-06**	**1.01E-05**	**3.46E-05**	**4.85E-07**	**5.04E-07**	**1.44E-05**	**5.47E-08**	**6.09E-05**	**2.02E-05**	**4.12E-05**	**0.00E+00**	**4.76E-04**	**5.17E-07**	**3.04E-07**	**2.35E-01**	**7.75E-01**

Table D-A1.2-23 Annual Operational HAP Emissions by Source Category, Alternative 1 (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2026																	
Vehicle Trips	2.01E-02	8.91E-03	2.90E-02	1.10E-04	4.30E-02	5.70E-03	3.33E-05	1.55E-06	1.81E-05	2.57E-04	1.33E-05	4.50E-03	1.40E-05	2.00E-02	0.00E+00	5.83E-07	7.50E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-03	0.00E+00	0.00E+00	1.24E-01	0.00E+00	0.00E+00
Architectural Coating	2.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-03	0.00E+00	3.43E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	5.70E-04	0.00E+00	6.13E-05	0.00E+00	1.24E-03	4.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-04	0.00E+00	1.82E-03	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.26E-02	0.00E+00	2.25E-03	0.00E+00	6.72E-03	2.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-04	0.00E+00	3.53E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	0.00E+00	0.00E+00	0.00E+00
Total	**5.80E-02**	**8.91E-03**	**3.14E-02**	**1.10E-04**	**6.31E-02**	**6.41E-03**	**3.33E-05**	**1.55E-06**	**1.81E-05**	**2.57E-04**	**1.33E-05**	**1.54E-02**	**1.40E-05**	**8.57E-02**	**1.24E-01**	**5.83E-07**	**7.50E-05**
Year 2030																	
Vehicle Trips	1.68E-02	7.45E-03	2.42E-02	9.16E-05	3.60E-02	4.76E-03	2.78E-05	1.29E-06	1.51E-05	2.15E-04	1.11E-05	3.76E-03	1.17E-05	1.67E-02	0.00E+00	4.87E-07	6.26E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-03	0.00E+00	0.00E+00	1.24E-01	0.00E+00	0.00E+00
Architectural Coating	2.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-03	0.00E+00	3.43E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	5.70E-04	0.00E+00	6.13E-05	0.00E+00	1.24E-03	4.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-04	0.00E+00	1.82E-03	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.26E-02	0.00E+00	2.26E-03	0.00E+00	6.73E-03	2.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.18E-04	0.00E+00	3.53E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	0.00E+00	0.00E+00	0.00E+00
Total	**5.47E-02**	**7.45E-03**	**2.67E-02**	**9.16E-05**	**5.60E-02**	**5.47E-03**	**2.78E-05**	**1.29E-06**	**1.51E-05**	**2.15E-04**	**1.11E-05**	**1.46E-02**	**1.17E-05**	**8.25E-02**	**1.24E-01**	**4.87E-07**	**6.26E-05**
Year 2035																	
Vehicle Trips	1.40E-02	6.21E-03	2.02E-02	7.64E-05	3.00E-02	3.97E-03	2.32E-05	1.08E-06	1.26E-05	1.79E-04	9.29E-06	3.14E-03	9.78E-06	1.40E-02	0.00E+00	4.06E-07	5.22E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-03	0.00E+00	0.00E+00	1.24E-01	0.00E+00	0.00E+00
Architectural Coating	2.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-03	0.00E+00	3.43E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	5.70E-04	0.00E+00	6.13E-05	0.00E+00	1.24E-03	4.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-04	0.00E+00	1.82E-03	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.22E-02	0.00E+00	2.18E-03	0.00E+00	6.51E-03	2.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.01E-04	0.00E+00	3.42E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	0.00E+00	0.00E+00	0.00E+00
Total	**5.15E-02**	**6.21E-03**	**2.26E-02**	**7.64E-05**	**4.98E-02**	**4.67E-03**	**2.32E-05**	**1.08E-06**	**1.26E-05**	**1.79E-04**	**9.29E-06**	**1.40E-02**	**9.78E-06**	**7.86E-02**	**1.24E-01**	**4.06E-07**	**5.22E-05**
Year 2050																	
Vehicle Trips	1.06E-02	4.69E-03	1.53E-02	5.77E-05	2.27E-02	3.00E-03	1.75E-05	8.16E-07	9.53E-06	1.35E-04	7.02E-06	2.37E-03	7.39E-06	1.05E-02	0.00E+00	3.07E-07	3.95E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-03	0.00E+00	0.00E+00	1.24E-01	0.00E+00	0.00E+00
Architectural Coating	2.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-03	0.00E+00	3.43E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	5.70E-04	0.00E+00	6.13E-05	0.00E+00	1.24E-03	4.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-04	0.00E+00	1.82E-03	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	1.22E-02	0.00E+00	2.19E-03	0.00E+00	6.53E-03	2.45E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-04	0.00E+00	3.42E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.81E-02**	**4.69E-03**	**1.76E-02**	**5.77E-05**	**4.25E-02**	**3.70E-03**	**1.75E-05**	**8.16E-07**	**9.53E-06**	**1.35E-04**	**7.02E-06**	**1.32E-02**	**7.39E-06**	**7.52E-02**	**1.24E-01**	**3.07E-07**	**3.95E-05**

Table D-A1.2-23 Annual Operational HAP Emissions by Source Category, Alternative 1 (tons per year), Continued

Source Category	Methyl isobutyl ketone (Hexone)	Methyl Methacrylate	Methylene Chloride	Naphthalene	N-hexane	Perchloroethylene	Propionaldehyde	Styrene	Toluene	1,1,1-trichloroethane	Trichloroethylene	2,2,4-trimethylpentane	Xylenes (Isomers)	M,P-xylene	O-xylene	Vinyl Chloride	Antimony
Year 2026																	
Vehicle Trips	1.10E-03	0.00E+00	9.74E-05	1.01E-03	3.56E-03	1.12E-05	3.18E-04	2.69E-03	4.67E-02	0.00E+00	0.00E+00	6.66E-02	0.00E+00	1.58E-02	3.59E-03	2.83E-06	2.48E-05
Consumer Products	3.49E-02	6.72E-04	1.75E-02	0.00E+00	5.98E-02	2.69E-02	0.00E+00	0.00E+00	2.45E-01	1.88E-02	5.78E-02	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	2.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-03	0.00E+00	2.99E-02	0.00E+00	0.00E+00	4.62E-03	0.00E+00	2.41E-02	9.16E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	3.32E-05	4.84E-04	0.00E+00	4.27E-05	0.00E+00	2.71E-03	0.00E+00	0.00E+00	7.31E-04	0.00E+00	1.96E-03	7.17E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03	0.00E+00	4.55E-03	0.00E+00	0.00E+00	9.68E-04	0.00E+00	1.42E-03	0.00E+00	0.00E+00	4.29E-06
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**5.79E-02**	**6.72E-04**	**1.76E-02**	**1.04E-03**	**6.39E-02**	**2.69E-02**	**6.55E-03**	**2.69E-03**	**3.35E-01**	**1.88E-02**	**5.78E-02**	**7.29E-02**	**1.95E-02**	**4.34E-02**	**1.35E-02**	**2.83E-06**	**2.91E-05**
Year 2030																	
Vehicle Trips	9.18E-04	0.00E+00	8.14E-05	8.44E-04	2.98E-03	9.37E-06	2.66E-04	2.25E-03	3.90E-02	0.00E+00	0.00E+00	5.56E-02	0.00E+00	1.32E-02	3.00E-03	2.37E-06	1.81E-05
Consumer Products	3.49E-02	6.72E-04	1.75E-02	0.00E+00	5.98E-02	2.69E-02	0.00E+00	0.00E+00	2.45E-01	1.88E-02	5.78E-02	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	2.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-03	0.00E+00	2.99E-02	0.00E+00	0.00E+00	4.62E-03	0.00E+00	2.41E-02	9.16E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	3.32E-05	4.84E-04	0.00E+00	4.27E-05	0.00E+00	2.71E-03	0.00E+00	0.00E+00	7.31E-04	0.00E+00	1.96E-03	7.17E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-03	0.00E+00	4.55E-03	0.00E+00	0.00E+00	9.69E-04	0.00E+00	1.42E-03	0.00E+00	0.00E+00	6.98E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**5.77E-02**	**6.72E-04**	**1.76E-02**	**8.77E-04**	**6.33E-02**	**2.69E-02**	**6.50E-03**	**2.25E-03**	**3.28E-01**	**1.88E-02**	**5.78E-02**	**6.20E-02**	**1.95E-02**	**4.08E-02**	**1.29E-02**	**2.37E-06**	**1.89E-05**
Year 2035																	
Vehicle Trips	7.66E-04	0.00E+00	6.79E-05	7.04E-04	2.48E-03	7.82E-06	2.22E-04	1.87E-03	3.26E-02	0.00E+00	0.00E+00	4.64E-02	0.00E+00	1.10E-02	2.51E-03	1.98E-06	1.27E-05
Consumer Products	3.49E-02	6.72E-04	1.75E-02	0.00E+00	5.98E-02	2.69E-02	0.00E+00	0.00E+00	2.45E-01	1.88E-02	5.78E-02	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	2.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-03	0.00E+00	2.99E-02	0.00E+00	0.00E+00	4.62E-03	0.00E+00	2.41E-02	9.16E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	3.32E-05	4.84E-04	0.00E+00	4.27E-05	0.00E+00	2.71E-03	0.00E+00	0.00E+00	7.31E-04	0.00E+00	1.96E-03	7.17E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-03	0.00E+00	4.40E-03	0.00E+00	0.00E+00	9.37E-04	0.00E+00	1.37E-03	0.00E+00	0.00E+00	5.07E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**5.75E-02**	**6.72E-04**	**1.75E-02**	**7.37E-04**	**6.28E-02**	**2.69E-02**	**6.37E-03**	**1.87E-03**	**3.21E-01**	**1.88E-02**	**5.78E-02**	**5.27E-02**	**1.95E-02**	**3.86E-02**	**1.24E-02**	**1.98E-06**	**1.33E-05**
Year 2050																	
Vehicle Trips	5.78E-04	0.00E+00	5.13E-05	5.32E-04	1.88E-03	5.90E-06	1.67E-04	1.42E-03	2.46E-02	0.00E+00	0.00E+00	3.50E-02	0.00E+00	8.34E-03	1.89E-03	1.49E-06	7.30E-06
Consumer Products	3.49E-02	6.72E-04	1.75E-02	0.00E+00	5.98E-02	2.69E-02	0.00E+00	0.00E+00	2.45E-01	1.88E-02	5.78E-02	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	2.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-03	0.00E+00	2.99E-02	0.00E+00	0.00E+00	4.62E-03	0.00E+00	2.41E-02	9.16E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	3.32E-05	4.84E-04	0.00E+00	4.27E-05	0.00E+00	2.71E-03	0.00E+00	0.00E+00	7.31E-04	0.00E+00	1.96E-03	7.17E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-03	0.00E+00	4.42E-03	0.00E+00	0.00E+00	9.40E-04	0.00E+00	1.38E-03	0.00E+00	0.00E+00	4.97E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**5.73E-02**	**6.72E-04**	**1.75E-02**	**5.65E-04**	**6.22E-02**	**2.69E-02**	**6.32E-03**	**1.42E-03**	**3.13E-01**	**1.88E-02**	**5.78E-02**	**4.14E-02**	**1.95E-02**	**3.59E-02**	**1.18E-02**	**1.49E-06**	**7.86E-06**

Table D-A1.2-23 Annual Operational HAP Emissions by Source Category, Alternative 1 (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2026																	
Vehicle Trips	2.07E-06	4.29E-06	3.83E-05	2.71E-06	1.69E-06	1.61E-06	1.86E-06	0.00E+00	6.14E-07	0.00E+00	0.00E+00	0.00E+00	1.80E-03	1.96E-06	1.15E-06	6.66E-02	2.75E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-01	6.09E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	1.26E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-03	1.14E-02
Off-Road Equipment	1.20E-07	1.75E-06	0.00E+00	1.21E-06	3.01E-07	6.01E-07	3.39E-06	4.21E-07	5.41E-07	0.00E+00	4.93E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-02	6.72E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.47E-05	0.00E+00	0.00E+00	1.79E-05	0.00E+00	8.05E-05	2.68E-05	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	4.14E-02
Total	**2.19E-06**	**6.07E-06**	**3.83E-05**	**4.86E-05**	**1.99E-06**	**2.22E-06**	**2.32E-05**	**4.27E-07**	**8.16E-05**	**2.68E-05**	**5.50E-05**	**0.00E+00**	**1.80E-03**	**1.96E-06**	**1.15E-06**	**3.35E-01**	**1.13E+00**
Year 2030																	
Vehicle Trips	1.51E-06	3.14E-06	2.80E-05	1.98E-06	1.23E-06	1.18E-06	1.36E-06	0.00E+00	4.48E-07	0.00E+00	0.00E+00	0.00E+00	1.32E-03	1.43E-06	8.39E-07	5.56E-02	2.30E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-01	6.09E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	1.26E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-03	1.14E-02
Off-Road Equipment	1.96E-08	2.86E-07	0.00E+00	1.98E-07	4.89E-08	9.78E-08	5.52E-07	6.85E-08	8.80E-08	0.00E+00	8.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-02	6.73E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.47E-05	0.00E+00	0.00E+00	1.79E-05	0.00E+00	8.05E-05	2.68E-05	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	4.14E-02
Total	**1.53E-06**	**3.45E-06**	**2.80E-05**	**4.69E-05**	**1.29E-06**	**1.28E-06**	**1.98E-05**	**7.44E-08**	**8.10E-05**	**2.68E-05**	**5.46E-05**	**0.00E+00**	**1.32E-03**	**1.43E-06**	**8.39E-07**	**3.28E-01**	**1.09E+00**
Year 2035																	
Vehicle Trips	1.06E-06	2.21E-06	1.97E-05	1.39E-06	8.67E-07	8.28E-07	9.58E-07	0.00E+00	3.15E-07	0.00E+00	0.00E+00	0.00E+00	9.26E-04	1.01E-06	5.90E-07	4.64E-02	1.91E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-01	6.09E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	1.26E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-03	1.14E-02
Off-Road Equipment	1.42E-08	2.07E-07	0.00E+00	1.43E-07	3.55E-08	7.10E-08	4.00E-07	4.97E-08	6.39E-08	0.00E+00	5.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.42E-02	6.51E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.47E-05	0.00E+00	0.00E+00	1.79E-05	0.00E+00	8.05E-05	2.68E-05	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	4.14E-02
Total	**1.08E-06**	**2.44E-06**	**1.97E-05**	**4.63E-05**	**9.07E-07**	**9.07E-07**	**1.93E-05**	**5.57E-08**	**8.08E-05**	**2.68E-05**	**5.46E-05**	**0.00E+00**	**9.26E-04**	**1.01E-06**	**5.90E-07**	**3.21E-01**	**1.05E+00**
Year 2050																	
Vehicle Trips	6.10E-07	1.27E-06	1.13E-05	7.99E-07	4.97E-07	4.75E-07	5.50E-07	0.00E+00	1.81E-07	0.00E+00	0.00E+00	0.00E+00	5.31E-04	5.77E-07	3.38E-07	3.50E-02	1.44E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-01	6.09E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	1.26E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-03	1.14E-02
Off-Road Equipment	1.39E-08	2.03E-07	0.00E+00	1.41E-07	3.48E-08	6.96E-08	3.93E-07	4.87E-08	6.26E-08	0.00E+00	5.71E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.42E-02	6.52E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.47E-05	0.00E+00	0.00E+00	1.79E-05	0.00E+00	8.05E-05	2.68E-05	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02	4.14E-02
Total	**6.26E-07**	**1.49E-06**	**1.13E-05**	**4.57E-05**	**5.36E-07**	**5.53E-07**	**1.89E-05**	**5.47E-08**	**8.07E-05**	**2.68E-05**	**5.46E-05**	**0.00E+00**	**5.31E-04**	**5.77E-07**	**3.38E-07**	**3.13E-01**	**1.00E+00**

Table D-A1.2-24 Annual Operational HAP Emissions by Source Category, Alternatives 2 through 5, Navy Development (tons per year)

Source Category	Acetaldehyde	Acetonitrile	Acrolein	Acrylonitrile	Benzene	1,3-butadiene	Carbon disulfide	Carbon tetrachloride	Chloroform	Cumene	Ethyl Chloride	Ethylbenzene	Ethylene Dibromide	Formaldehyde	Methyl alcohol (Methanol)	Methyl Bromide	Methyl Chloride
Year 2026																	
Vehicle Trips	1.14E-02	5.06E-03	1.65E-02	6.23E-05	2.45E-02	3.24E-03	1.89E-05	8.80E-07	1.03E-05	1.46E-04	7.58E-06	2.56E-03	7.97E-06	1.14E-02	0.00E+00	3.31E-07	4.26E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-03	0.00E+00	0.00E+00	7.61E-02	0.00E+00	0.00E+00
Architectural Coating	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-03	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	9.82E-05	0.00E+00	1.06E-05	0.00E+00	2.14E-04	7.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.63E-05	0.00E+00	3.14E-04	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	3.51E-03	0.00E+00	6.28E-04	0.00E+00	1.87E-03	7.02E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-04	0.00E+00	9.83E-03	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	0.00E+00	0.00E+00	0.00E+00
Total	**3.02E-02**	**5.06E-03**	**1.72E-02**	**6.23E-05**	**3.65E-02**	**3.40E-03**	**1.89E-05**	**8.80E-07**	**1.03E-05**	**1.46E-04**	**7.58E-06**	**8.77E-03**	**7.97E-06**	**4.45E-02**	**7.61E-02**	**3.31E-07**	**4.26E-05**
Year 2030																	
Vehicle Trips	9.62E-03	4.26E-03	1.39E-02	5.24E-05	2.06E-02	2.73E-03	1.59E-05	7.41E-07	8.65E-06	1.23E-04	6.38E-06	2.15E-03	6.71E-06	9.57E-03	0.00E+00	2.79E-07	3.58E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-03	0.00E+00	0.00E+00	7.61E-02	0.00E+00	0.00E+00
Architectural Coating	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-03	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	9.82E-05	0.00E+00	1.06E-05	0.00E+00	2.14E-04	7.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.63E-05	0.00E+00	3.14E-04	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	3.60E-03	0.00E+00	6.43E-04	0.00E+00	1.92E-03	7.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-04	0.00E+00	1.01E-02	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	0.00E+00	0.00E+00	0.00E+00
Total	**2.85E-02**	**4.26E-03**	**1.46E-02**	**5.24E-05**	**3.26E-02**	**2.89E-03**	**1.59E-05**	**7.41E-07**	**8.65E-06**	**1.23E-04**	**6.38E-06**	**8.37E-03**	**6.71E-06**	**4.29E-02**	**7.61E-02**	**2.79E-07**	**3.58E-05**
Year 2035																	
Vehicle Trips	8.04E-03	3.56E-03	1.16E-02	4.38E-05	1.72E-02	2.28E-03	1.33E-05	6.19E-07	7.23E-06	1.03E-04	5.33E-06	1.80E-03	5.61E-06	8.00E-03	0.00E+00	2.33E-07	3.00E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-03	0.00E+00	0.00E+00	7.61E-02	0.00E+00	0.00E+00
Architectural Coating	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-03	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	9.82E-05	0.00E+00	1.06E-05	0.00E+00	2.14E-04	7.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.63E-05	0.00E+00	3.14E-04	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	3.49E-03	0.00E+00	6.24E-04	0.00E+00	1.86E-03	6.98E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-04	0.00E+00	9.77E-03	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	0.00E+00	0.00E+00	0.00E+00
Total	**2.68E-02**	**3.56E-03**	**1.23E-02**	**4.38E-05**	**2.92E-02**	**2.44E-03**	**1.33E-05**	**6.19E-07**	**7.23E-06**	**1.03E-04**	**5.33E-06**	**8.01E-03**	**5.61E-06**	**4.11E-02**	**7.61E-02**	**2.33E-07**	**3.00E-05**
Year 2050																	
Vehicle Trips	6.16E-03	2.73E-03	8.88E-03	3.35E-05	1.32E-02	1.74E-03	1.02E-05	4.74E-07	5.54E-06	7.88E-05	4.08E-06	1.38E-03	4.29E-06	6.13E-03	0.00E+00	1.78E-07	2.29E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-03	0.00E+00	0.00E+00	7.61E-02	0.00E+00	0.00E+00
Architectural Coating	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-03	0.00E+00	2.07E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	9.82E-05	0.00E+00	1.06E-05	0.00E+00	2.14E-04	7.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.63E-05	0.00E+00	3.14E-04	0.00E+00	0.00E+00	0.00E+00
Off-Road Equipment	3.50E-03	0.00E+00	6.26E-04	0.00E+00	1.87E-03	7.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-04	0.00E+00	9.80E-03	0.00E+00	0.00E+00	0.00E+00
Stationary Equipment	5.99E-04	0.00E+00	1.07E-04	0.00E+00	3.19E-04	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-05	0.00E+00	1.68E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	0.00E+00	0.00E+00	0.00E+00
Total	**2.49E-02**	**2.73E-03**	**9.62E-03**	**3.35E-05**	**2.52E-02**	**1.90E-03**	**1.02E-05**	**4.74E-07**	**5.54E-06**	**7.88E-05**	**4.08E-06**	**7.59E-03**	**4.29E-06**	**3.92E-02**	**7.61E-02**	**1.78E-07**	**2.29E-05**

Table D-A1.2-24 Annual Operational HAP Emissions by Source Category, Alternatives 2 through 5, Navy Development (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
Year 2026																	
Vehicle Trips	6.24E-04	0.00E+00	5.53E-05	5.74E-04	2.02E-03	6.37E-06	1.81E-04	1.53E-03	2.65E-02	0.00E+00	0.00E+00	3.78E-02	0.00E+00	9.00E-03	2.04E-03	1.61E-06	1.43E-05
Consumer Products	2.15E-02	4.14E-04	1.08E-02	0.00E+00	3.68E-02	1.66E-02	0.00E+00	0.00E+00	1.51E-01	1.16E-02	3.56E-02	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03	0.00E+00	1.81E-02	0.00E+00	0.00E+00	2.79E-03	0.00E+00	1.46E-02	5.54E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.73E-06	8.34E-05	0.00E+00	7.36E-06	0.00E+00	4.68E-04	0.00E+00	0.00E+00	1.26E-04	0.00E+00	3.39E-04	1.24E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.35E-04	0.00E+00	1.27E-03	0.00E+00	0.00E+00	2.70E-04	0.00E+00	3.95E-04	0.00E+00	0.00E+00	1.22E-06
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**3.53E-02**	**4.14E-04**	**1.08E-02**	**5.80E-04**	**3.89E-02**	**1.66E-02**	**3.12E-03**	**1.53E-03**	**2.02E-01**	**1.16E-02**	**3.56E-02**	**4.11E-02**	**1.20E-02**	**2.44E-02**	**7.70E-03**	**1.61E-06**	**1.56E-05**
Year 2030																	
Vehicle Trips	5.25E-04	0.00E+00	4.66E-05	4.83E-04	1.70E-03	5.36E-06	1.52E-04	1.29E-03	2.23E-02	0.00E+00	0.00E+00	3.18E-02	0.00E+00	7.57E-03	1.72E-03	1.36E-06	1.05E-05
Consumer Products	2.15E-02	4.14E-04	1.08E-02	0.00E+00	3.68E-02	1.66E-02	0.00E+00	0.00E+00	1.51E-01	1.16E-02	3.56E-02	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03	0.00E+00	1.81E-02	0.00E+00	0.00E+00	2.79E-03	0.00E+00	1.46E-02	5.54E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.73E-06	8.34E-05	0.00E+00	7.36E-06	0.00E+00	4.68E-04	0.00E+00	0.00E+00	1.26E-04	0.00E+00	3.39E-04	1.24E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.53E-04	0.00E+00	1.30E-03	0.00E+00	0.00E+00	2.76E-04	0.00E+00	4.05E-04	0.00E+00	0.00E+00	1.83E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**3.52E-02**	**4.14E-04**	**1.08E-02**	**4.89E-04**	**3.86E-02**	**1.66E-02**	**3.11E-03**	**1.29E-03**	**1.98E-01**	**1.16E-02**	**3.56E-02**	**3.51E-02**	**1.20E-02**	**2.30E-02**	**7.38E-03**	**1.36E-06**	**1.08E-05**
Year 2035																	
Vehicle Trips	4.39E-04	0.00E+00	3.89E-05	4.04E-04	1.42E-03	4.48E-06	1.27E-04	1.07E-03	1.87E-02	0.00E+00	0.00E+00	2.66E-02	0.00E+00	6.33E-03	1.44E-03	1.13E-06	7.43E-06
Consumer Products	2.15E-02	4.14E-04	1.08E-02	0.00E+00	3.68E-02	1.66E-02	0.00E+00	0.00E+00	1.51E-01	1.16E-02	3.56E-02	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03	0.00E+00	1.81E-02	0.00E+00	0.00E+00	2.79E-03	0.00E+00	1.46E-02	5.54E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.73E-06	8.34E-05	0.00E+00	7.36E-06	0.00E+00	4.68E-04	0.00E+00	0.00E+00	1.26E-04	0.00E+00	3.39E-04	1.24E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.31E-04	0.00E+00	1.26E-03	0.00E+00	0.00E+00	2.68E-04	0.00E+00	3.93E-04	0.00E+00	0.00E+00	1.40E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**3.51E-02**	**4.14E-04**	**1.08E-02**	**4.09E-04**	**3.83E-02**	**1.66E-02**	**3.06E-03**	**1.07E-03**	**1.94E-01**	**1.16E-02**	**3.56E-02**	**2.98E-02**	**1.20E-02**	**2.17E-02**	**7.10E-03**	**1.13E-06**	**7.63E-06**
Year 2050																	
Vehicle Trips	3.36E-04	0.00E+00	2.98E-05	3.09E-04	1.09E-03	3.43E-06	9.73E-05	8.23E-04	1.43E-02	0.00E+00	0.00E+00	2.04E-02	0.00E+00	4.85E-03	1.10E-03	8.67E-07	4.36E-06
Consumer Products	2.15E-02	4.14E-04	1.08E-02	0.00E+00	3.68E-02	1.66E-02	0.00E+00	0.00E+00	1.51E-01	1.16E-02	3.56E-02	0.00E+00	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-03	0.00E+00	1.81E-02	0.00E+00	0.00E+00	2.79E-03	0.00E+00	1.46E-02	5.54E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.73E-06	8.34E-05	0.00E+00	7.36E-06	0.00E+00	4.68E-04	0.00E+00	0.00E+00	1.26E-04	0.00E+00	3.39E-04	1.24E-04	0.00E+00	0.00E+00
Off-Road Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.33E-04	0.00E+00	1.26E-03	0.00E+00	0.00E+00	2.69E-04	0.00E+00	3.94E-04	0.00E+00	0.00E+00	1.40E-07
Stationary Equipment	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	0.00E+00	2.16E-04	0.00E+00	0.00E+00	4.60E-05	0.00E+00	6.74E-05	0.00E+00	0.00E+00	6.07E-08
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**3.50E-02**	**4.14E-04**	**1.08E-02**	**3.15E-04**	**3.80E-02**	**1.66E-02**	**3.03E-03**	**8.23E-04**	**1.90E-01**	**1.16E-02**	**3.56E-02**	**2.36E-02**	**1.20E-02**	**2.02E-02**	**6.76E-03**	**8.67E-07**	**4.56E-06**

Table D-A1.2-24 Annual Operational HAP Emissions by Source Category, Alternatives 2 through 5, Navy Development (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2026																	
Vehicle Trips	1.19E-06	2.48E-06	2.21E-05	1.56E-06	9.73E-07	9.29E-07	1.08E-06	0.00E+00	3.54E-07	0.00E+00	0.00E+00	0.00E+00	1.04E-03	1.13E-06	6.62E-07	3.78E-02	1.56E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-01	3.75E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02	7.64E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-04	1.96E-03
Off-Road Equipment	3.42E-08	4.99E-07	0.00E+00	3.45E-07	8.55E-08	1.71E-07	9.64E-07	1.20E-07	1.54E-07	0.00E+00	1.40E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.83E-03	1.87E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.66E-05	0.00E+00	0.00E+00	1.46E-05	0.00E+00	6.58E-05	2.19E-05	4.46E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	3.38E-02
Total	**1.23E-06**	**3.00E-06**	**2.21E-05**	**3.85E-05**	**1.06E-06**	**1.11E-06**	**1.67E-05**	**1.26E-07**	**6.63E-05**	**2.19E-05**	**4.47E-05**	**0.00E+00**	**1.04E-03**	**1.13E-06**	**6.62E-07**	**2.02E-01**	**6.65E-01**
Year 2030																	
Vehicle Trips	8.82E-07	1.83E-06	1.63E-05	1.15E-06	7.18E-07	6.86E-07	7.94E-07	0.00E+00	2.61E-07	0.00E+00	0.00E+00	0.00E+00	7.67E-04	8.33E-07	4.89E-07	3.18E-02	1.31E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-01	3.75E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02	7.64E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-04	1.96E-03
Off-Road Equipment	5.14E-09	7.50E-08	0.00E+00	5.19E-08	1.29E-08	2.57E-08	1.45E-07	1.80E-08	2.31E-08	0.00E+00	2.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02	1.92E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.66E-05	0.00E+00	0.00E+00	1.46E-05	0.00E+00	6.58E-05	2.19E-05	4.46E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	3.38E-02
Total	**8.88E-07**	**1.93E-06**	**1.63E-05**	**3.78E-05**	**7.35E-07**	**7.20E-07**	**1.56E-05**	**2.39E-08**	**6.61E-05**	**2.19E-05**	**4.46E-05**	**0.00E+00**	**7.67E-04**	**8.33E-07**	**4.89E-07**	**1.98E-01**	**6.41E-01**
Year 2035																	
Vehicle Trips	6.21E-07	1.29E-06	1.15E-05	8.13E-07	5.06E-07	4.83E-07	5.59E-07	0.00E+00	1.84E-07	0.00E+00	0.00E+00	0.00E+00	5.40E-04	5.86E-07	3.44E-07	2.66E-02	1.10E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-01	3.75E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02	7.64E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-04	1.96E-03
Off-Road Equipment	3.92E-09	5.72E-08	0.00E+00	3.96E-08	9.80E-09	1.96E-08	1.11E-07	1.37E-08	1.76E-08	0.00E+00	1.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.77E-03	1.86E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.66E-05	0.00E+00	0.00E+00	1.46E-05	0.00E+00	6.58E-05	2.19E-05	4.46E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	3.38E-02
Total	**6.26E-07**	**1.37E-06**	**1.15E-05**	**3.74E-05**	**5.20E-07**	**5.11E-07**	**1.53E-05**	**1.97E-08**	**6.60E-05**	**2.19E-05**	**4.46E-05**	**0.00E+00**	**5.40E-04**	**5.86E-07**	**3.44E-07**	**1.94E-01**	**6.19E-01**
Year 2050																	
Vehicle Trips	3.65E-07	7.56E-07	6.74E-06	4.78E-07	2.97E-07	2.84E-07	3.28E-07	0.00E+00	1.08E-07	0.00E+00	0.00E+00	0.00E+00	3.17E-04	3.44E-07	2.02E-07	2.04E-02	8.40E-02
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-01	3.75E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02	7.64E-02
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-04	1.96E-03
Off-Road Equipment	3.92E-09	5.72E-08	0.00E+00	3.96E-08	9.80E-09	1.96E-08	1.11E-07	1.37E-08	1.76E-08	0.00E+00	1.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.80E-03	1.87E-02
Stationary Equipment	1.70E-09	2.48E-08	0.00E+00	1.72E-08	4.25E-09	8.50E-09	4.79E-08	5.95E-09	7.65E-09	0.00E+00	6.97E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-03	3.19E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.66E-05	0.00E+00	0.00E+00	1.46E-05	0.00E+00	6.58E-05	2.19E-05	4.46E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-02	3.38E-02
Total	**3.70E-07**	**8.38E-07**	**6.74E-06**	**3.71E-05**	**3.11E-07**	**3.12E-07**	**1.51E-05**	**1.97E-08**	**6.59E-05**	**2.19E-05**	**4.46E-05**	**0.00E+00**	**3.17E-04**	**3.44E-07**	**2.02E-07**	**1.90E-01**	**5.93E-01**

Table D-A1.2-25 Annual Operational HAP Emissions by Source Category, Alternative 2, Private Development (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2030																	
Vehicle Trips	3.26E-02	1.44E-02	4.70E-02	1.77E-04	6.97E-02	9.23E-03	5.39E-05	2.51E-06	2.93E-05	4.17E-04	2.16E-05	7.29E-03	2.27E-05	3.24E-02	0.00E+00	9.44E-07	1.21E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.54E-03	0.00E+00	0.00E+00	1.39E-01	0.00E+00	0.00E+00
Architectural Coating	3.40E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.09E-03	0.00E+00	4.83E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	4.97E-04	0.00E+00	5.35E-05	0.00E+00	1.08E-03	3.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-04	0.00E+00	1.59E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-02	0.00E+00	0.00E+00	0.00E+00
Total	**6.71E-02**	**1.44E-02**	**4.70E-02**	**1.77E-04**	**8.12E-02**	**9.62E-03**	**5.39E-05**	**2.51E-06**	**2.93E-05**	**4.17E-04**	**2.16E-05**	**2.04E-02**	**2.27E-05**	**5.96E-02**	**1.39E-01**	**9.44E-07**	**1.21E-04**
Year 2035																	
Vehicle Trips	4.84E-02	2.14E-02	6.97E-02	2.64E-04	1.03E-01	1.37E-02	8.01E-05	3.73E-06	4.35E-05	6.19E-04	3.21E-05	1.08E-02	3.37E-05	4.81E-02	0.00E+00	1.40E-06	1.80E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.16E-03	0.00E+00	0.00E+00	2.50E-01	0.00E+00	0.00E+00
Architectural Coating	6.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-02	0.00E+00	8.70E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	8.95E-04	0.00E+00	9.64E-05	0.00E+00	1.95E-03	6.95E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.77E-04	0.00E+00	2.87E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.74E-02	0.00E+00	0.00E+00	0.00E+00
Total	**1.11E-01**	**2.14E-02**	**6.98E-02**	**2.64E-04**	**1.24E-01**	**1.44E-02**	**8.01E-05**	**3.73E-06**	**4.35E-05**	**6.19E-04**	**3.21E-05**	**3.44E-02**	**3.37E-05**	**9.71E-02**	**2.50E-01**	**1.40E-06**	**1.80E-04**
Year 2050																	
Vehicle Trips	7.99E-02	3.54E-02	1.15E-01	4.35E-04	1.71E-01	2.26E-02	1.32E-04	6.16E-06	7.19E-05	1.02E-03	5.30E-05	1.79E-02	5.57E-05	7.95E-02	0.00E+00	2.32E-06	2.98E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02	0.00E+00	0.00E+00	5.56E-01	0.00E+00	0.00E+00
Architectural Coating	1.36E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.23E-02	0.00E+00	1.93E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	1.99E-03	0.00E+00	2.14E-04	0.00E+00	4.34E-03	1.54E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-03	0.00E+00	6.37E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.31E-02	0.00E+00	0.00E+00	0.00E+00
Total	**2.18E-01**	**3.54E-02**	**1.15E-01**	**4.35E-04**	**2.17E-01**	**2.42E-02**	**1.32E-04**	**6.16E-06**	**7.19E-05**	**1.02E-03**	**5.30E-05**	**7.03E-02**	**5.57E-05**	**1.88E-01**	**5.56E-01**	**2.32E-06**	**2.98E-04**

Table D-A1.2-25 Annual Operational HAP Emissions by Source Category, Alternative 2, Private Development (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
Year 2030																	
Vehicle Trips	1.78E-03	0.00E+00	1.58E-04	1.64E-03	5.77E-03	1.82E-05	5.15E-04	4.35E-03	7.56E-02	0.00E+00	0.00E+00	1.08E-01	0.00E+00	2.56E-02	5.82E-03	4.59E-06	2.82E-05
Consumer Products	3.93E-02	7.56E-04	1.97E-02	0.00E+00	6.73E-02	3.02E-02	0.00E+00	0.00E+00	2.76E-01	2.12E-02	6.50E-02	0.00E+00	2.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	3.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.83E-03	0.00E+00	4.21E-02	0.00E+00	0.00E+00	6.51E-03	0.00E+00	3.40E-02	1.29E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	2.90E-05	4.22E-04	0.00E+00	3.73E-05	0.00E+00	2.37E-03	0.00E+00	0.00E+00	6.38E-04	0.00E+00	1.71E-03	6.26E-04	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**7.19E-02**	**7.56E-04**	**1.98E-02**	**1.66E-03**	**7.35E-02**	**3.03E-02**	**5.38E-03**	**4.35E-03**	**4.01E-01**	**2.12E-02**	**6.50E-02**	**1.15E-01**	**2.19E-02**	**6.14E-02**	**1.94E-02**	**4.59E-06**	**2.82E-05**
Year 2035																	
Vehicle Trips	2.64E-03	0.00E+00	2.34E-04	2.43E-03	8.57E-03	2.70E-05	7.65E-04	6.47E-03	1.12E-01	0.00E+00	0.00E+00	1.60E-01	0.00E+00	3.81E-02	8.64E-03	6.81E-06	3.59E-05
Consumer Products	7.08E-02	1.36E-03	3.54E-02	0.00E+00	1.21E-01	5.44E-02	0.00E+00	0.00E+00	4.97E-01	3.81E-02	1.17E-01	0.00E+00	3.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	5.54E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.70E-03	0.00E+00	7.58E-02	0.00E+00	0.00E+00	1.17E-02	0.00E+00	6.12E-02	2.33E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.22E-05	7.60E-04	0.00E+00	6.71E-05	0.00E+00	4.26E-03	0.00E+00	0.00E+00	1.15E-03	0.00E+00	3.09E-03	1.13E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**1.29E-01**	**1.36E-03**	**3.56E-02**	**2.48E-03**	**1.30E-01**	**5.45E-02**	**9.53E-03**	**6.47E-03**	**6.98E-01**	**3.81E-02**	**1.17E-01**	**1.73E-01**	**3.95E-02**	**1.02E-01**	**3.30E-02**	**6.81E-06**	**3.59E-05**
Year 2050																	
Vehicle Trips	4.36E-03	0.00E+00	3.87E-04	4.01E-03	1.42E-02	4.46E-05	1.26E-03	1.07E-02	1.86E-01	0.00E+00	0.00E+00	2.64E-01	0.00E+00	6.29E-02	1.43E-02	1.13E-05	4.37E-05
Consumer Products	1.57E-01	3.02E-03	7.86E-02	0.00E+00	2.69E-01	1.21E-01	0.00E+00	0.00E+00	1.10E+00	8.47E-02	2.60E-01	0.00E+00	8.77E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.23E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.93E-02	0.00E+00	1.68E-01	0.00E+00	0.00E+00	2.60E-02	0.00E+00	1.36E-01	5.17E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	1.16E-04	1.69E-03	0.00E+00	1.49E-04	0.00E+00	9.47E-03	0.00E+00	0.00E+00	2.55E-03	0.00E+00	6.86E-03	2.50E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**2.85E-01**	**3.02E-03**	**7.90E-02**	**4.13E-03**	**2.85E-01**	**1.21E-01**	**2.07E-02**	**1.07E-02**	**1.49E+00**	**8.47E-02**	**2.60E-01**	**2.93E-01**	**8.77E-02**	**2.06E-01**	**6.85E-02**	**1.13E-05**	**4.37E-05**

Table D-A1.2-25 Annual Operational HAP Emissions by Source Category, Alternative 2, Private Development (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/ fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2030																	
Vehicle Trips	2.36E-06	4.90E-06	4.36E-05	3.09E-06	1.92E-06	1.84E-06	2.13E-06	0.00E+00	6.99E-07	0.00E+00	0.00E+00	0.00E+00	2.05E-03	2.23E-06	1.31E-06	1.08E-01	4.45E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-01	6.85E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-02	1.78E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-03	9.94E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	3.95E-05	0.00E+00	0.00E+00	1.58E-05	0.00E+00	7.11E-05	2.37E-05	4.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-02	3.66E-02
Total	**2.36E-06**	**4.90E-06**	**4.36E-05**	**4.26E-05**	**1.92E-06**	**1.84E-06**	**1.79E-05**	**0.00E+00**	**7.18E-05**	**2.37E-05**	**4.82E-05**	**0.00E+00**	**2.05E-03**	**2.23E-06**	**1.31E-06**	**4.01E-01**	**1.35E+00**
Year 2035																	
Vehicle Trips	3.00E-06	6.22E-06	5.54E-05	3.93E-06	2.44E-06	2.33E-06	2.70E-06	0.00E+00	8.89E-07	0.00E+00	0.00E+00	0.00E+00	2.61E-03	2.83E-06	1.66E-06	1.60E-01	6.60E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.97E-01	1.23E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.58E-02	3.21E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-03	1.79E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	7.11E-05	0.00E+00	0.00E+00	2.84E-05	0.00E+00	1.28E-04	4.26E-05	8.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.74E-02	6.58E-02
Total	**3.00E-06**	**6.22E-06**	**5.54E-05**	**7.50E-05**	**2.44E-06**	**2.33E-06**	**3.11E-05**	**0.00E+00**	**1.29E-04**	**4.26E-05**	**8.67E-05**	**0.00E+00**	**2.61E-03**	**2.83E-06**	**1.66E-06**	**6.98E-01**	**2.30E+00**
Year 2050																	
Vehicle Trips	3.65E-06	7.57E-06	6.75E-05	4.78E-06	2.98E-06	2.84E-06	3.29E-06	0.00E+00	1.08E-06	0.00E+00	0.00E+00	0.00E+00	3.18E-03	3.45E-06	2.03E-06	2.64E-01	1.09E+00
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E+00	2.74E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-01	7.12E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.47E-03	3.97E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	1.58E-04	0.00E+00	0.00E+00	6.32E-05	0.00E+00	2.84E-04	9.48E-05	1.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.31E-02	1.46E-01
Total	**3.65E-06**	**7.57E-06**	**6.75E-05**	**1.63E-04**	**2.98E-06**	**2.84E-06**	**6.65E-05**	**0.00E+00**	**2.85E-04**	**9.48E-05**	**1.93E-04**	**0.00E+00**	**3.18E-03**	**3.45E-06**	**2.03E-06**	**1.49E+00**	**4.73E+00**

Table D-A1.2-26 Annual Operational HAP Emissions by Source Category, Alternative 3, Private Development (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2030																	
Vehicle Trips	2.23E-02	9.88E-03	3.21E-02	1.21E-04	4.77E-02	6.32E-03	3.69E-05	1.72E-06	2.01E-05	2.85E-04	1.48E-05	4.99E-03	1.55E-05	2.22E-02	0.00E+00	6.46E-07	8.31E-05
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.02E-03	0.00E+00	0.00E+00	9.26E-02	0.00E+00	0.00E+00
Architectural Coating	2.27E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-03	0.00E+00	3.23E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	4.25E-04	0.00E+00	4.57E-05	0.00E+00	9.26E-04	3.30E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.16E-04	0.00E+00	1.36E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-02	0.00E+00	0.00E+00	0.00E+00
Total	**4.54E-02**	**9.88E-03**	**3.22E-02**	**1.21E-04**	**5.54E-02**	**6.65E-03**	**3.69E-05**	**1.72E-06**	**2.01E-05**	**2.85E-04**	**1.48E-05**	**1.38E-02**	**1.55E-05**	**4.04E-02**	**9.26E-02**	**6.46E-07**	**8.31E-05**
Year 2035																	
Vehicle Trips	3.31E-02	1.47E-02	4.78E-02	1.81E-04	7.09E-02	9.39E-03	5.49E-05	2.55E-06	2.98E-05	4.24E-04	2.20E-05	7.42E-03	2.31E-05	3.30E-02	0.00E+00	9.60E-07	1.23E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.44E-03	0.00E+00	0.00E+00	1.67E-01	0.00E+00	0.00E+00
Architectural Coating	4.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.72E-03	0.00E+00	5.81E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	7.65E-04	0.00E+00	8.23E-05	0.00E+00	1.67E-03	5.94E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E-04	0.00E+00	2.45E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-02	0.00E+00	0.00E+00	0.00E+00
Total	**7.48E-02**	**1.47E-02**	**4.79E-02**	**1.81E-04**	**8.48E-02**	**9.98E-03**	**5.49E-05**	**2.55E-06**	**2.98E-05**	**4.24E-04**	**2.20E-05**	**2.33E-02**	**2.31E-05**	**6.57E-02**	**1.67E-01**	**9.60E-07**	**1.23E-04**
Year 2050																	
Vehicle Trips	5.62E-02	2.49E-02	8.10E-02	3.06E-04	1.20E-01	1.59E-02	9.31E-05	4.33E-06	5.06E-05	7.19E-04	3.73E-05	1.26E-02	3.92E-05	5.59E-02	0.00E+00	1.63E-06	2.09E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-02	0.00E+00	0.00E+00	3.70E-01	0.00E+00	0.00E+00
Architectural Coating	9.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-02	0.00E+00	1.29E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	1.70E-03	0.00E+00	1.83E-04	0.00E+00	3.71E-03	1.32E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-03	0.00E+00	5.44E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.72E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-02	0.00E+00	0.00E+00	0.00E+00
Total	**1.49E-01**	**2.49E-02**	**8.12E-02**	**3.06E-04**	**1.51E-01**	**1.72E-02**	**9.31E-05**	**4.33E-06**	**5.06E-05**	**7.19E-04**	**3.73E-05**	**4.79E-02**	**3.92E-05**	**1.29E-01**	**3.70E-01**	**1.63E-06**	**2.09E-04**

Table D-A1.2-26 Annual Operational HAP Emissions by Source Category, Alternative 3, Private Development (tons per year), Continued

Source Category	Methyl isobutyl ketone (Hexone)	Methyl Methacrylate	Methylene Chloride	Naphthalene	N-hexane	Perchloroethylene	Propionaldehyde	Styrene	Toluene	1,1,1-trichloroethane	Trichloroethylene	2,2,4-trimethylpentane	Xylenes (Isomers)	M,P-xylene	O-xylene	Vinyl Chloride	Antimony
Year 2030																	
Vehicle Trips	1.22E-03	0.00E+00	1.08E-04	1.12E-03	3.95E-03	1.24E-05	3.52E-04	2.98E-03	5.18E-02	0.00E+00	0.00E+00	7.38E-02	0.00E+00	1.76E-02	3.98E-03	3.14E-06	1.96E-05
Consumer Products	2.62E-02	5.03E-04	1.31E-02	0.00E+00	4.48E-02	2.01E-02	0.00E+00	0.00E+00	1.84E-01	1.41E-02	4.33E-02	0.00E+00	1.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	2.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.23E-03	0.00E+00	2.81E-02	0.00E+00	0.00E+00	4.34E-03	0.00E+00	2.27E-02	8.62E-03	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	2.48E-05	3.61E-04	0.00E+00	3.18E-05	0.00E+00	2.02E-03	0.00E+00	0.00E+00	5.45E-04	0.00E+00	1.46E-03	5.35E-04	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.79E-02**	**5.03E-04**	**1.32E-02**	**1.14E-03**	**4.91E-02**	**2.01E-02**	**3.61E-03**	**2.98E-03**	**2.69E-01**	**1.41E-02**	**4.33E-02**	**7.87E-02**	**1.46E-02**	**4.17E-02**	**1.31E-02**	**3.14E-06**	**1.96E-05**
Year 2035																	
Vehicle Trips	1.81E-03	0.00E+00	1.60E-04	1.66E-03	5.87E-03	1.85E-05	5.24E-04	4.43E-03	7.69E-02	0.00E+00	0.00E+00	1.10E-01	0.00E+00	2.61E-02	5.92E-03	4.67E-06	2.49E-05
Consumer Products	4.71E-02	9.06E-04	2.36E-02	0.00E+00	8.06E-02	3.62E-02	0.00E+00	0.00E+00	3.31E-01	2.54E-02	7.79E-02	0.00E+00	2.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	3.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.81E-03	0.00E+00	5.06E-02	0.00E+00	0.00E+00	7.82E-03	0.00E+00	4.09E-02	1.55E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	4.46E-05	6.49E-04	0.00E+00	5.73E-05	0.00E+00	3.64E-03	0.00E+00	0.00E+00	9.82E-04	0.00E+00	2.64E-03	9.63E-04	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.11E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**8.59E-02**	**9.06E-04**	**2.37E-02**	**1.71E-03**	**8.71E-02**	**3.63E-02**	**6.39E-03**	**4.43E-03**	**4.68E-01**	**2.54E-02**	**7.79E-02**	**1.18E-01**	**2.63E-02**	**6.96E-02**	**2.24E-02**	**4.67E-06**	**2.49E-05**
Year 2050																	
Vehicle Trips	3.07E-03	0.00E+00	2.72E-04	2.82E-03	9.96E-03	3.13E-05	8.89E-04	7.51E-03	1.30E-01	0.00E+00	0.00E+00	1.86E-01	0.00E+00	4.42E-02	1.00E-02	7.92E-06	3.23E-05
Consumer Products	1.05E-01	2.01E-03	5.23E-02	0.00E+00	1.79E-01	8.05E-02	0.00E+00	0.00E+00	7.35E-01	5.64E-02	1.73E-01	0.00E+00	5.84E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	8.21E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-02	0.00E+00	1.12E-01	0.00E+00	0.00E+00	1.74E-02	0.00E+00	9.08E-02	3.45E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	9.91E-05	1.44E-03	0.00E+00	1.27E-04	0.00E+00	8.09E-03	0.00E+00	0.00E+00	2.18E-03	0.00E+00	5.86E-03	2.14E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**1.90E-01**	**2.01E-03**	**5.26E-02**	**2.92E-03**	**1.91E-01**	**8.06E-02**	**1.39E-02**	**7.51E-03**	**9.99E-01**	**5.64E-02**	**1.73E-01**	**2.06E-01**	**5.84E-02**	**1.41E-01**	**4.67E-02**	**7.92E-06**	**3.23E-05**

Table D-A1.2-26 Annual Operational HAP Emissions by Source Category, Alternative 3, Private Development (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/ fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2030																	
Vehicle Trips	1.64E-06	3.39E-06	3.02E-05	2.14E-06	1.33E-06	1.27E-06	1.47E-06	0.00E+00	4.85E-07	0.00E+00	0.00E+00	0.00E+00	1.42E-03	1.55E-06	9.08E-07	7.38E-02	3.04E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E-01	4.56E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E-02	1.19E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-03	8.49E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	2.58E-05	0.00E+00	0.00E+00	1.03E-05	0.00E+00	4.65E-05	1.55E-05	3.15E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-02	2.39E-02
Total	**1.64E-06**	**3.39E-06**	**3.02E-05**	**2.80E-05**	**1.33E-06**	**1.27E-06**	**1.18E-05**	**0.00E+00**	**4.69E-05**	**1.55E-05**	**3.15E-05**	**0.00E+00**	**1.42E-03**	**1.55E-06**	**9.08E-07**	**2.69E-01**	**9.12E-01**
Year 2035																	
Vehicle Trips	2.08E-06	4.32E-06	3.85E-05	2.73E-06	1.70E-06	1.62E-06	1.87E-06	0.00E+00	6.17E-07	0.00E+00	0.00E+00	0.00E+00	1.81E-03	1.97E-06	1.15E-06	1.10E-01	4.52E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-01	8.21E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.06E-02	2.14E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-03	1.53E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.65E-05	0.00E+00	0.00E+00	1.86E-05	0.00E+00	8.36E-05	2.79E-05	5.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-02	4.30E-02
Total	**2.08E-06**	**4.32E-06**	**3.85E-05**	**4.92E-05**	**1.70E-06**	**1.62E-06**	**2.05E-05**	**0.00E+00**	**8.42E-05**	**2.79E-05**	**5.67E-05**	**0.00E+00**	**1.81E-03**	**1.97E-06**	**1.15E-06**	**4.68E-01**	**1.55E+00**
Year 2050																	
Vehicle Trips	2.70E-06	5.59E-06	4.98E-05	3.53E-06	2.20E-06	2.10E-06	2.43E-06	0.00E+00	7.99E-07	0.00E+00	0.00E+00	0.00E+00	2.35E-03	2.55E-06	1.50E-06	1.86E-01	7.66E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.35E-01	1.82E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-01	4.75E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.09E-03	3.40E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	1.03E-04	0.00E+00	0.00E+00	4.13E-05	0.00E+00	1.86E-04	6.20E-05	1.26E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-02	9.56E-02
Total	**2.70E-06**	**5.59E-06**	**4.98E-05**	**1.07E-04**	**2.20E-06**	**2.10E-06**	**4.37E-05**	**0.00E+00**	**1.87E-04**	**6.20E-05**	**1.26E-04**	**0.00E+00**	**2.35E-03**	**2.55E-06**	**1.50E-06**	**9.99E-01**	**3.19E+00**

Table D-A1.2-27 Annual Operational HAP Emissions by Source Category, Alternative 4, Private Development (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2030																	
Vehicle Trips	4.32E-02	1.91E-02	6.22E-02	2.35E-04	9.23E-02	1.22E-02	7.15E-05	3.32E-06	3.88E-05	5.52E-04	2.86E-05	9.66E-03	3.01E-05	4.29E-02	0.00E+00	1.25E-06	1.61E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.78E-03	0.00E+00	0.00E+00	2.08E-01	0.00E+00	0.00E+00
Architectural Coating	5.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-02	0.00E+00	7.23E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	5.32E-04	0.00E+00	5.73E-05	0.00E+00	1.16E-03	4.13E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.21E-04	0.00E+00	1.70E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	0.00E+00	0.00E+00	0.00E+00
Total	**9.46E-02**	**1.91E-02**	**6.23E-02**	**2.35E-04**	**1.08E-01**	**1.26E-02**	**7.15E-05**	**3.32E-06**	**3.88E-05**	**5.52E-04**	**2.86E-05**	**2.91E-02**	**3.01E-05**	**8.17E-02**	**2.08E-01**	**1.25E-06**	**1.61E-04**
Year 2035																	
Vehicle Trips	6.32E-02	2.80E-02	9.12E-02	3.44E-04	1.35E-01	1.79E-02	1.05E-04	4.87E-06	5.69E-05	8.09E-04	4.19E-05	1.42E-02	4.41E-05	6.29E-02	0.00E+00	1.83E-06	2.36E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-02	0.00E+00	0.00E+00	3.74E-01	0.00E+00	0.00E+00
Architectural Coating	9.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-02	0.00E+00	1.30E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	9.57E-04	0.00E+00	1.03E-04	0.00E+00	2.09E-03	7.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.38E-04	0.00E+00	3.07E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.38E-02	0.00E+00	0.00E+00	0.00E+00
Total	**1.56E-01**	**2.80E-02**	**9.13E-02**	**3.44E-04**	**1.64E-01**	**1.87E-02**	**1.05E-04**	**4.87E-06**	**5.69E-05**	**8.09E-04**	**4.19E-05**	**4.91E-02**	**4.41E-05**	**1.33E-01**	**3.74E-01**	**1.83E-06**	**2.36E-04**
Year 2050																	
Vehicle Trips	1.03E-01	4.55E-02	1.48E-01	5.59E-04	2.20E-01	2.91E-02	1.70E-04	7.90E-06	9.23E-05	1.31E-03	6.80E-05	2.30E-02	7.16E-05	1.02E-01	0.00E+00	2.97E-06	3.82E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-02	0.00E+00	0.00E+00	8.31E-01	0.00E+00	0.00E+00
Architectural Coating	2.04E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.84E-02	0.00E+00	2.89E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	2.13E-03	0.00E+00	2.29E-04	0.00E+00	4.64E-03	1.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-03	0.00E+00	6.81E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.97E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-01	0.00E+00	0.00E+00	0.00E+00
Total	**3.09E-01**	**4.55E-02**	**1.48E-01**	**5.59E-04**	**2.84E-01**	**3.07E-02**	**1.70E-04**	**7.90E-06**	**9.23E-05**	**1.31E-03**	**6.80E-05**	**1.01E-01**	**7.16E-05**	**2.57E-01**	**8.31E-01**	**2.97E-06**	**3.82E-04**

Table D-A1.2-27 Annual Operational HAP Emissions by Source Category, Alternative 4, Private Development (tons per year), Continued

Source Category	Methyl isobutyl ketone (Hexone)	Methyl Methacrylate	Methylene Chloride	Naphthalene	N-hexane	Perchloroethylene	Propionaldehyde	Styrene	Toluene	1,1,1-trichloroethane	Trichloroethylene	2,2,4-trimethylpentane	Xylenes (Isomers)	M,P-xylene	O-xylene	Vinyl Chloride	Antimony
Year 2030																	
Vehicle Trips	2.36E-03	0.00E+00	2.09E-04	2.17E-03	7.64E-03	2.41E-05	6.82E-04	5.77E-03	1.00E-01	0.00E+00	0.00E+00	1.43E-01	0.00E+00	3.40E-02	7.71E-03	6.08E-06	3.66E-05
Consumer Products	5.87E-02	1.13E-03	2.94E-02	0.00E+00	1.01E-01	4.52E-02	0.00E+00	0.00E+00	4.12E-01	3.16E-02	9.71E-02	0.00E+00	3.28E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	4.61E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.23E-03	0.00E+00	6.30E-02	0.00E+00	0.00E+00	9.74E-03	0.00E+00	5.09E-02	1.93E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	3.10E-05	4.52E-04	0.00E+00	3.98E-05	0.00E+00	2.53E-03	0.00E+00	0.00E+00	6.83E-04	0.00E+00	1.83E-03	6.69E-04	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**1.07E-01**	**1.13E-03**	**2.96E-02**	**2.20E-03**	**1.09E-01**	**4.52E-02**	**7.96E-03**	**5.77E-03**	**5.85E-01**	**3.16E-02**	**9.71E-02**	**1.53E-01**	**3.28E-02**	**8.67E-02**	**2.77E-02**	**6.08E-06**	**3.66E-05**
Year 2035																	
Vehicle Trips	3.45E-03	0.00E+00	3.06E-04	3.17E-03	1.12E-02	3.52E-05	1.00E-03	8.45E-03	1.47E-01	0.00E+00	0.00E+00	2.09E-01	0.00E+00	4.98E-02	1.13E-02	8.91E-06	4.52E-05
Consumer Products	1.06E-01	2.03E-03	5.29E-02	0.00E+00	1.81E-01	8.13E-02	0.00E+00	0.00E+00	7.42E-01	5.69E-02	1.75E-01	0.00E+00	5.90E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	8.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-02	0.00E+00	1.13E-01	0.00E+00	0.00E+00	1.75E-02	0.00E+00	9.17E-02	3.48E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.58E-05	8.13E-04	0.00E+00	7.17E-05	0.00E+00	4.56E-03	0.00E+00	0.00E+00	1.23E-03	0.00E+00	3.30E-03	1.21E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**1.92E-01**	**2.03E-03**	**5.32E-02**	**3.23E-03**	**1.93E-01**	**8.14E-02**	**1.41E-02**	**8.45E-03**	**1.02E+00**	**5.69E-02**	**1.75E-01**	**2.28E-01**	**5.90E-02**	**1.45E-01**	**4.73E-02**	**8.91E-06**	**4.52E-05**
Year 2050																	
Vehicle Trips	5.60E-03	0.00E+00	4.97E-04	5.15E-03	1.82E-02	5.72E-05	1.62E-03	1.37E-02	2.38E-01	0.00E+00	0.00E+00	3.40E-01	0.00E+00	8.08E-02	1.83E-02	1.45E-05	5.24E-05
Consumer Products	2.35E-01	4.52E-03	1.17E-01	0.00E+00	4.02E-01	1.81E-01	0.00E+00	0.00E+00	1.65E+00	1.26E-01	3.89E-01	0.00E+00	1.31E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.84E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.89E-02	0.00E+00	2.52E-01	0.00E+00	0.00E+00	3.90E-02	0.00E+00	2.04E-01	7.74E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	1.24E-04	1.81E-03	0.00E+00	1.59E-04	0.00E+00	1.01E-02	0.00E+00	0.00E+00	2.73E-03	0.00E+00	7.34E-03	2.68E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**4.25E-01**	**4.52E-03**	**1.18E-01**	**5.28E-03**	**4.22E-01**	**1.81E-01**	**3.07E-02**	**1.37E-02**	**2.18E+00**	**1.26E-01**	**3.89E-01**	**3.81E-01**	**1.31E-01**	**2.92E-01**	**9.84E-02**	**1.45E-05**	**5.24E-05**

Table D-A1.2-27 Annual Operational HAP Emissions by Source Category, Alternative 4, Private Development (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2030																	
Vehicle Trips	3.06E-06	6.34E-06	5.65E-05	4.01E-06	2.49E-06	2.38E-06	2.75E-06	0.00E+00	9.06E-07	0.00E+00	0.00E+00	0.00E+00	2.66E-03	2.89E-06	1.70E-06	1.43E-01	5.89E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.12E-01	1.02E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.30E-02	2.67E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-03	1.06E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	5.68E-05	0.00E+00	0.00E+00	2.27E-05	0.00E+00	1.02E-04	3.41E-05	6.92E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-02	5.26E-02
Total	**3.06E-06**	**6.34E-06**	**5.65E-05**	**6.08E-05**	**2.49E-06**	**2.38E-06**	**2.55E-05**	**0.00E+00**	**1.03E-04**	**3.41E-05**	**6.92E-05**	**0.00E+00**	**2.66E-03**	**2.89E-06**	**1.70E-06**	**5.85E-01**	**1.94E+00**
Year 2035																	
Vehicle Trips	3.77E-06	7.83E-06	6.98E-05	4.94E-06	3.08E-06	2.94E-06	3.40E-06	0.00E+00	1.12E-06	0.00E+00	0.00E+00	0.00E+00	3.28E-03	3.57E-06	2.09E-06	2.09E-01	8.63E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.42E-01	1.84E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-01	4.80E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-03	1.91E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	4.09E-05	0.00E+00	1.84E-04	6.13E-05	1.25E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.38E-02	9.46E-02
Total	**3.77E-06**	**7.83E-06**	**6.98E-05**	**1.07E-04**	**3.08E-06**	**2.94E-06**	**4.43E-05**	**0.00E+00**	**1.85E-04**	**6.13E-05**	**1.25E-04**	**0.00E+00**	**3.28E-03**	**3.57E-06**	**2.09E-06**	**1.02E+00**	**3.30E+00**
Year 2050																	
Vehicle Trips	4.38E-06	9.08E-06	8.09E-05	5.73E-06	3.57E-06	3.40E-06	3.94E-06	0.00E+00	1.30E-06	0.00E+00	0.00E+00	0.00E+00	3.81E-03	4.13E-06	2.43E-06	3.40E-01	1.40E+00
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E+00	4.09E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-01	1.07E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-02	4.25E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	2.27E-04	0.00E+00	0.00E+00	9.08E-05	0.00E+00	4.09E-04	1.36E-04	2.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-01	2.10E-01
Total	**4.38E-06**	**9.08E-06**	**8.09E-05**	**2.33E-04**	**3.57E-06**	**3.40E-06**	**9.47E-05**	**0.00E+00**	**4.10E-04**	**1.36E-04**	**2.77E-04**	**0.00E+00**	**3.81E-03**	**4.13E-06**	**2.43E-06**	**2.18E+00**	**6.81E+00**

Table D-A1.2-28 Annual Operational HAP Emissions by Source Category, Alternative 5, Private Development (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
Year 2030																	
Vehicle Trips	3.44E-02	1.52E-02	4.96E-02	1.87E-04	7.36E-02	9.75E-03	5.70E-05	2.65E-06	3.09E-05	4.40E-04	2.28E-05	7.70E-03	2.40E-05	3.42E-02	0.00E+00	9.97E-07	1.28E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.34E-03	0.00E+00	0.00E+00	1.64E-01	0.00E+00	0.00E+00
Architectural Coating	4.03E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.58E-03	0.00E+00	5.73E-03	0.00E+00	0.00E+00	0.00E+00
Landscaping	4.94E-04	0.00E+00	5.31E-05	0.00E+00	1.08E-03	3.83E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.84E-04	0.00E+00	1.58E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-02	0.00E+00	0.00E+00	0.00E+00
Total	**7.52E-02**	**1.52E-02**	**4.97E-02**	**1.87E-04**	**8.65E-02**	**1.01E-02**	**5.70E-05**	**2.65E-06**	**3.09E-05**	**4.40E-04**	**2.28E-05**	**2.31E-02**	**2.40E-05**	**6.53E-02**	**1.64E-01**	**9.97E-07**	**1.28E-04**
Year 2035																	
Vehicle Trips	5.07E-02	2.25E-02	7.31E-02	2.76E-04	1.08E-01	1.44E-02	8.40E-05	3.91E-06	4.56E-05	6.49E-04	3.36E-05	1.14E-02	3.54E-05	5.05E-02	0.00E+00	1.47E-06	1.89E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.62E-03	0.00E+00	0.00E+00	2.95E-01	0.00E+00	0.00E+00
Architectural Coating	7.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-02	0.00E+00	1.03E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	8.88E-04	0.00E+00	9.57E-05	0.00E+00	1.94E-03	6.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.71E-04	0.00E+00	2.84E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.27E-02	0.00E+00	0.00E+00	0.00E+00
Total	**1.24E-01**	**2.25E-02**	**7.32E-02**	**2.76E-04**	**1.32E-01**	**1.51E-02**	**8.40E-05**	**3.91E-06**	**4.56E-05**	**6.49E-04**	**3.36E-05**	**3.91E-02**	**3.54E-05**	**1.06E-01**	**2.95E-01**	**1.47E-06**	**1.89E-04**
Year 2050																	
Vehicle Trips	8.30E-02	3.68E-02	1.20E-01	4.52E-04	1.78E-01	2.35E-02	1.38E-04	6.40E-06	7.47E-05	1.06E-03	5.50E-05	1.86E-02	5.79E-05	8.26E-02	0.00E+00	2.41E-06	3.09E-04
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-02	0.00E+00	0.00E+00	6.55E-01	0.00E+00	0.00E+00
Architectural Coating	1.61E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.83E-02	0.00E+00	2.29E-02	0.00E+00	0.00E+00	0.00E+00
Landscaping	1.97E-03	0.00E+00	2.13E-04	0.00E+00	4.30E-03	1.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.94E-03	0.00E+00	6.32E-03	0.00E+00	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.74E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.49E-02	0.00E+00	0.00E+00	0.00E+00
Total	**2.46E-01**	**3.68E-02**	**1.20E-01**	**4.52E-04**	**2.29E-01**	**2.51E-02**	**1.38E-04**	**6.40E-06**	**7.47E-05**	**1.06E-03**	**5.50E-05**	**8.02E-02**	**5.79E-05**	**2.07E-01**	**6.55E-01**	**2.41E-06**	**3.09E-04**

Table D-A1.2-28 Annual Operational HAP Emissions by Source Category, Alternative 5, Private Development (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
Year 2030																	
Vehicle Trips	1.88E-03	0.00E+00	1.67E-04	1.73E-03	6.10E-03	1.92E-05	5.44E-04	4.60E-03	7.99E-02	0.00E+00	0.00E+00	1.14E-01	0.00E+00	2.71E-02	6.15E-03	4.85E-06	2.91E-05
Consumer Products	4.63E-02	8.90E-04	2.31E-02	0.00E+00	7.92E-02	3.56E-02	0.00E+00	0.00E+00	3.25E-01	2.49E-02	7.66E-02	0.00E+00	2.58E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	3.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-03	0.00E+00	4.99E-02	0.00E+00	0.00E+00	7.71E-03	0.00E+00	4.03E-02	1.53E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	2.88E-05	4.19E-04	0.00E+00	3.70E-05	0.00E+00	2.35E-03	0.00E+00	0.00E+00	6.34E-04	0.00E+00	1.70E-03	6.21E-04	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**8.46E-02**	**8.90E-04**	**2.33E-02**	**1.76E-03**	**8.58E-02**	**3.56E-02**	**6.31E-03**	**4.60E-03**	**4.63E-01**	**2.49E-02**	**7.66E-02**	**1.22E-01**	**2.58E-02**	**6.91E-02**	**2.21E-02**	**4.85E-06**	**2.91E-05**
Year 2035																	
Vehicle Trips	2.77E-03	0.00E+00	2.45E-04	2.55E-03	8.98E-03	2.83E-05	8.02E-04	6.78E-03	1.18E-01	0.00E+00	0.00E+00	1.68E-01	0.00E+00	3.99E-02	9.06E-03	7.14E-06	3.64E-05
Consumer Products	8.33E-02	1.60E-03	4.17E-02	0.00E+00	1.43E-01	6.41E-02	0.00E+00	0.00E+00	5.85E-01	4.49E-02	1.38E-01	0.00E+00	4.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	6.56E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E-02	0.00E+00	8.98E-02	0.00E+00	0.00E+00	1.39E-02	0.00E+00	7.26E-02	2.76E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	5.18E-05	7.55E-04	0.00E+00	6.66E-05	0.00E+00	4.23E-03	0.00E+00	0.00E+00	1.14E-03	0.00E+00	3.06E-03	1.12E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**1.52E-01**	**1.60E-03**	**4.19E-02**	**2.60E-03**	**1.52E-01**	**6.41E-02**	**1.12E-02**	**6.78E-03**	**8.07E-01**	**4.49E-02**	**1.38E-01**	**1.83E-01**	**4.65E-02**	**1.16E-01**	**3.77E-02**	**7.14E-06**	**3.64E-05**
Year 2050																	
Vehicle Trips	4.53E-03	0.00E+00	4.02E-04	4.17E-03	1.47E-02	4.63E-05	1.31E-03	1.11E-02	1.93E-01	0.00E+00	0.00E+00	2.75E-01	0.00E+00	6.54E-02	1.48E-02	1.17E-05	4.32E-05
Consumer Products	1.85E-01	3.56E-03	9.26E-02	0.00E+00	3.17E-01	1.42E-01	0.00E+00	0.00E+00	1.30E+00	9.97E-02	3.06E-01	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Architectural Coating	1.46E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-02	0.00E+00	2.00E-01	0.00E+00	0.00E+00	3.08E-02	0.00E+00	1.61E-01	6.12E-02	0.00E+00	0.00E+00
Landscaping	0.00E+00	0.00E+00	0.00E+00	1.15E-04	1.68E-03	0.00E+00	1.48E-04	0.00E+00	9.40E-03	0.00E+00	0.00E+00	2.53E-03	0.00E+00	6.81E-03	2.49E-03	0.00E+00	0.00E+00
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	**3.36E-01**	**3.56E-03**	**9.30E-02**	**4.28E-03**	**3.33E-01**	**1.42E-01**	**2.44E-02**	**1.11E-02**	**1.73E+00**	**9.97E-02**	**3.06E-01**	**3.08E-01**	**1.03E-01**	**2.33E-01**	**7.86E-02**	**1.17E-05**	**4.32E-05**

Table D-A1.2-28 Annual Operational HAP Emissions by Source Category, Alternative 5, Private Development (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
Year 2030																	
Vehicle Trips	2.43E-06	5.04E-06	4.49E-05	3.19E-06	1.98E-06	1.89E-06	2.19E-06	0.00E+00	7.21E-07	0.00E+00	0.00E+00	0.00E+00	2.12E-03	2.30E-06	1.35E-06	1.14E-01	4.70E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.25E-01	8.07E-01
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.99E-02	2.11E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-03	9.86E-03
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	4.51E-05	0.00E+00	0.00E+00	1.80E-05	0.00E+00	8.11E-05	2.70E-05	5.50E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-02	4.17E-02
Total	**2.43E-06**	**5.04E-06**	**4.49E-05**	**4.83E-05**	**1.98E-06**	**1.89E-06**	**2.02E-05**	**0.00E+00**	**8.19E-05**	**2.70E-05**	**5.50E-05**	**0.00E+00**	**2.12E-03**	**2.30E-06**	**1.35E-06**	**4.63E-01**	**1.54E+00**
Year 2035																	
Vehicle Trips	3.04E-06	6.31E-06	5.63E-05	3.99E-06	2.48E-06	2.37E-06	2.74E-06	0.00E+00	9.02E-07	0.00E+00	0.00E+00	0.00E+00	2.65E-03	2.88E-06	1.69E-06	1.68E-01	6.92E-01
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.85E-01	1.45E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-02	3.80E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.23E-03	1.78E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	8.11E-05	0.00E+00	0.00E+00	3.25E-05	0.00E+00	1.46E-04	4.87E-05	9.90E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.27E-02	7.51E-02
Total	**3.04E-06**	**6.31E-06**	**5.63E-05**	**8.51E-05**	**2.48E-06**	**2.37E-06**	**3.52E-05**	**0.00E+00**	**1.47E-04**	**4.87E-05**	**9.90E-05**	**0.00E+00**	**2.65E-03**	**2.88E-06**	**1.69E-06**	**8.07E-01**	**2.62E+00**
Year 2050																	
Vehicle Trips	3.61E-06	7.49E-06	6.67E-05	4.73E-06	2.94E-06	2.81E-06	3.25E-06	0.00E+00	1.07E-06	0.00E+00	0.00E+00	0.00E+00	3.14E-03	3.41E-06	2.00E-06	2.75E-01	1.13E+00
Consumer Products	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+00	3.23E+00
Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-01	8.44E-01
Landscaping	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.40E-03	3.95E-02
Natural Gas Use	0.00E+00	0.00E+00	0.00E+00	1.80E-04	0.00E+00	0.00E+00	7.21E-05	0.00E+00	3.25E-04	1.08E-04	2.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.49E-02	1.67E-01
Total	**3.61E-06**	**7.49E-06**	**6.67E-05**	**1.85E-04**	**2.94E-06**	**2.81E-06**	**7.54E-05**	**0.00E+00**	**3.26E-04**	**1.08E-04**	**2.20E-04**	**0.00E+00**	**3.14E-03**	**3.41E-06**	**2.00E-06**	**1.73E+00**	**5.41E+00**

Table D-A1.2-29 Annual Operational HAP Emissions, Alternatives 4 and 5, Transit Center Total Vehicle Trips (tons per year)

Source Category	*Acetaldehyde*	*Acetonitrile*	*Acrolein*	*Acrylonitrile*	*Benzene*	*1,3-butadiene*	*Carbon disulfide*	*Carbon tetrachloride*	*Chloroform*	*Cumene*	*Ethyl Chloride*	*Ethylbenzene*	*Ethylene Dibromide*	*Formaldehyde*	*Methyl alcohol (Methanol)*	*Methyl Bromide*	*Methyl Chloride*
2035	7.64E-03	3.39E-03	1.10E-02	4.16E-05	1.63E-02	2.16E-03	1.27E-05	5.88E-07	6.87E-06	9.77E-05	5.06E-06	1.71E-03	5.33E-06	7.60E-03	0.00E+00	2.21E-07	2.85E-05
2050	6.95E-03	3.08E-03	1.00E-02	3.78E-05	1.49E-02	1.97E-03	1.15E-05	5.35E-07	6.25E-06	8.88E-05	4.60E-06	1.55E-03	4.84E-06	6.91E-03	0.00E+00	2.01E-07	2.59E-05

Table D-A1.2-29 Annual Operational HAP Emissions, Alternatives 4 and 5, Transit Center Total Vehicle Trips (tons per year), Continued

Source Category	*Methyl isobutyl ketone (Hexone)*	*Methyl Methacrylate*	*Methylene Chloride*	*Naphthalene*	*N-hexane*	*Perchloroethylene*	*Propionaldehyde*	*Styrene*	*Toluene*	*1,1,1-trichloroethane*	*Trichloroethylene*	*2,2,4-trimethylpentane*	*Xylenes (Isomers)*	*M,P-xylene*	*O-xylene*	*Vinyl Chloride*	Antimony
2035	4.17E-04	0.00E+00	3.70E-05	3.84E-04	1.35E-03	4.26E-06	1.21E-04	1.02E-03	1.77E-02	0.00E+00	0.00E+00	2.53E-02	0.00E+00	6.01E-03	1.37E-03	1.08E-06	7.05E-06
2050	3.79E-04	0.00E+00	3.36E-05	3.49E-04	1.23E-03	3.87E-06	1.10E-04	9.28E-04	1.61E-02	0.00E+00	0.00E+00	2.30E-02	0.00E+00	5.47E-03	1.24E-03	9.78E-07	5.33E-06

Table D-A1.2-29 Annual Operational HAP Emissions, Alternatives 4 and 5, Transit Center Total Vehicle Trips (tons per year), Continued

Source Category	Arsenic	Cadmium	Chlorine	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	**Phosphorus**	Selenium	**Uranium**	2,6-Dimethylnaphthalene	1-methylfluoranthene, C-methylpyrene/ fluoranthene	C-methylpyrene & methylfluoranthene	Highest Single HAP	Combined HAPs
2035	5.89E-07	1.22E-06	1.09E-05	7.72E-07	4.80E-07	4.58E-07	5.31E-07	0.00E+00	1.75E-07	0.00E+00	0.00E+00	0.00E+00	5.13E-04	5.57E-07	3.27E-07	2.53E-02	1.04E-01
2050	4.45E-07	9.24E-07	8.23E-06	5.83E-07	3.63E-07	3.46E-07	4.01E-07	0.00E+00	1.32E-07	0.00E+00	0.00E+00	0.00E+00	3.87E-04	4.21E-07	2.47E-07	2.30E-02	9.48E-02

Table D-A1.2-30 Annual Operational GHG Emissions by Source Category, 2020
Existing Conditions

Source Category	***CO_2 (MT/yr)***	***CH_4 (MT/yr)***	***N_2O (MT/yr)***	***CO_2e (MT/yr)***
Vehicle Trips	5,927	0.3	0.0	5,935
Operational Equipment	195.6	0.1	0.0	197
Natural Gas Use	965	0.0	0.0	971
Electricity Use	3,130	0.1	0.0	3,141
Water Use and Treatment	1,435	13.4	0.3	1,868
Solid Waste Disposal	150	8.8	0.0	370
Total	**11,802**	**22.8**	**0.4**	**12,482**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Table D-A1.2-31 Annual Operational GHG Emissions by Source Category, No Action Alternative

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2026	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	4,527	0.2	0.0	4,533
Operational Equipment	195.6	0.1	0.0	197
Natural Gas Use	965	0.0	0.0	971
Electricity Use	2,843	0.1	0.0	2,854
Water Use and Treatment	1,315	13.4	0.3	1,749
Solid Waste Disposal	150	8.8	0.0	370
Total	**9,996**	**22.7**	**0.4**	**10,673**
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	3,917	0.2	0.0	3,922
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	965	0.0	0.0	971
Electricity Use	2,276	0.1	0.0	2,284
Water Use and Treatment	1,079	13.4	0.3	1,511
Solid Waste Disposal	150	8.8	0.0	370
Total	**8,618**	**22.6**	**0.4**	**9,290**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	3,495	0.2	0.0	3,499
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	965	0.0	0.0	971
Electricity Use	2,276	0.1	0.0	2,284
Water Use and Treatment	1,079	13.4	0.3	1,511
Solid Waste Disposal	150	8.8	0.0	370
Total	**8,195**	**22.5**	**0.4**	**8,867**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	2,756	0.1	0.0	2,759
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	965	0.0	0.0	971
Electricity Use	2,276	0.1	0.0	2,284
Water Use and Treatment	1,079	13.4	0.3	1,511
Solid Waste Disposal	150	8.8	0.0	370
Total	**7,456**	**22.5**	**0.4**	**8,127**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Table D-A1.2-32 Annual Operational GHG Emissions by Source Category, Alternative 1

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2026	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	5,011	0.2	0.0	5,017
Landscaping[(1)]	--[(2)]	--	--	2
Operational Equipment	195.6	0.1	0.0	197
Natural Gas Use	1,280	0.0	0.0	1,288
Electricity Use	3,579	0.1	0.0	3,592
Water Use and Treatment	1,219	10.8	0.3	1,569
Solid Waste Disposal	292	17.3	0.0	723
Total	**11,577**	**28.6**	**0.3**	**12,389**
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	4,336	0.2	0.0	4,341
Landscaping	--	--	--	2
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	1,280	0.0	0.0	1,288
Electricity Use	2,864	0.1	0.0	2,875
Water Use and Treatment	997	10.8	0.3	1,346
Solid Waste Disposal	292	17.3	0.0	723
Total	**10,001**	**28.4**	**0.3**	**10,806**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	3,868	0.2	0.0	3,873
Landscaping	--	--	--	2
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	1,280	0.0	0.0	1,288
Electricity Use	2,864	0.1	0.0	2,875
Water Use and Treatment	997	10.8	0.3	1,346
Solid Waste Disposal	292	17.3	0.0	723
Total	**9,533**	**28.4**	**0.3**	**10,338**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	3,050	0.1	0.0	3,054
Landscaping	--	--	--	2
Operational Equipment	231.5	0.0	0.0	232
Natural Gas Use	1,280	0.0	0.0	1,288
Electricity Use	2,864	0.1	0.0	2,875
Water Use and Treatment	997	10.8	0.3	1,346
Solid Waste Disposal	292	17.3	0.0	723
Total	**8,715**	**28.4**	**0.3**	**9,519**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Landscaping emissions were calculated outside of CalEEMod.

[(2)]Not calculated (see CO_2e instead).

Table D-A1.2-33 Annual Operational GHG Emissions by Source Category, Alternatives 2 through 5, Navy Development

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2026	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	2,889	0.1	0.0	2,892
Landscaping[1]	--[2]	--	--	0
Operational Equipment	55.1	0.0	0.0	55
Natural Gas Use	1,046	0.0	0.0	1,053
Electricity Use	2,856	0.1	0.0	2,866
Water Use and Treatment	823	6.8	0.2	1,044
Solid Waste Disposal	172	10.2	0.0	427
Total	**7,841**	**17.3**	**0.2**	**8,338**
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	2,536	0.1	0.0	2,539
Landscaping	--	--	--	0
Operational Equipment	65.8	0.0	0.0	66
Natural Gas Use	1,046	0.0	0.0	1,053
Electricity Use	2,286	0.1	0.0	2,294
Water Use and Treatment	672	6.8	0.2	892
Solid Waste Disposal	172	10.2	0.0	427
Total	**6,779**	**17.2**	**0.2**	**7,271**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	2,268	0.1	0.0	2,270
Landscaping	--	--	--	0
Operational Equipment	65.8	0.0	0.0	66
Natural Gas Use	1,046	0.0	0.0	1,053
Electricity Use	2,286	0.1	0.0	2,294
Water Use and Treatment	672	6.8	0.2	892
Solid Waste Disposal	172	10.2	0.0	427
Total	**6,510**	**17.2**	**0.2**	**7,002**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	1,838	0.1	0.0	1,840
Landscaping	--	--	--	0
Operational Equipment	65.8	0.0	0.0	66
Natural Gas Use	1,046	0.0	0.0	1,053
Electricity Use	2,286	0.1	0.0	2,294
Water Use and Treatment	672	6.8	0.2	892
Solid Waste Disposal	172	10.2	0.0	427
Total	**6,080**	**17.2**	**0.2**	**6,571**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [1]Landscaping emissions were calculated outside of CalEEMod.

[2]Not calculated (see CO_2e instead).

Table D-A1.2-34 Annual Operational GHG Emissions by Source Category, Alternative 2, Private Development

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	6,525	0.3	0.0	6,534
Landscaping[(1)]	--[(2)]	--	--	1
Natural Gas Use	1,131	0.0	0.0	1,138
Electricity Use	2,117	0.1	0.0	2,125
Water Use and Treatment	461	4.1	0.1	594
Solid Waste Disposal	222	13.1	0.0	550
Total	**10,457**	**17.7**	**0.1**	**10,942**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	10,494	0.5	0.0	10,508
Landscaping	--	--	--	1
Natural Gas Use	2,036	0.0	0.0	2,048
Electricity Use	3,811	0.2	0.0	3,825
Water Use and Treatment	830	7.4	0.2	1,070
Solid Waste Disposal	400	23.6	0.0	990
Total	**17,571**	**31.8**	**0.3**	**18,442**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	17,757	0.9	0.0	17,780
Landscaping	--	--	--	3
Natural Gas Use	4,525	0.1	0.1	4,552
Electricity Use	8,469	0.3	0.1	8,499
Water Use and Treatment	1,844	16.5	0.4	2,377
Solid Waste Disposal	888	52.5	0.0	2,200
Total	**33,483**	**70.4**	**0.6**	**35,411**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Landscaping emissions were calculated outside of CalEEMod.

[(2)]Not calculated (see CO_2e instead).

Table D-A1.2-35 Annual Operational GHG Emissions by Source Category, Alternative 3, Private Development

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	4,537	0.2	0.0	4,542
Landscaping[(1)]	--[(2)]	--	--	1
Natural Gas Use	740	0.0	0.0	744
Electricity Use	1,400	0.1	0.0	1,405
Water Use and Treatment	306	2.7	0.1	394
Solid Waste Disposal	147	8.7	0.0	365
Total	**7,129**	**11.7**	**0.1**	**7,451**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	7,301	0.4	0.0	7,310
Landscaping	--	--	--	1
Natural Gas Use	1,331	0.0	0.0	1,339
Electricity Use	2,520	0.1	0.0	2,529
Water Use and Treatment	550	4.9	0.1	709
Solid Waste Disposal	265	15.7	0.0	657
Total	**11,967**	**21.1**	**0.2**	**12,546**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	13,215	0.7	0.0	13,232
Landscaping	--	--	--	3
Natural Gas Use	2,958	0.1	0.1	2,976
Electricity Use	5,601	0.2	0.0	5,621
Water Use and Treatment	1,222	10.9	0.3	1,575
Solid Waste Disposal	589	34.8	0.0	1,459
Total	**23,586**	**46.7**	**0.4**	**24,867**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Landscaping emissions were calculated outside of CalEEMod.

[(2)]Not calculated (see CO_2e instead).

Table D-A1.2-36 Annual Operational GHG Emissions by Source Category, Alternative 4, Private Development

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	8,420	0.4	0.0	8,432
Landscaping[(1)]	--[(2)]	--	--	1
Natural Gas Use	1,626	0.0	0.0	1,635
Electricity Use	3,120	0.1	0.0	3,132
Water Use and Treatment	694	6.2	0.2	895
Solid Waste Disposal	363	21.5	0.0	900
Total	**14,224**	**28.3**	**0.2**	**14,994**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips[(3)]	13,094	0.7	0.0	13,111
Landscaping	--	--	--	1
Natural Gas Use	2,926	0.1	0.1	2,944
Electricity Use	5,617	0.2	0.0	5,637
Water Use and Treatment	1,249	11.2	0.3	1,610
Solid Waste Disposal	654	38.7	0.0	1,621
Total	**23,540**	**50.8**	**0.4**	**24,924**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips[(2)]	21,028	1.2	0.0	21,057
Landscaping	--	--	--	3
Natural Gas Use	6,503	0.1	0.1	6,541
Electricity Use	12,482	0.5	0.1	12,526
Water Use and Treatment	2,776	24.8	0.6	3,578
Solid Waste Disposal	1,454	85.9	0.0	3,602
Total	**44,243**	**112.5**	**0.8**	**47,307**

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes : [(1)]Landscaping emissions were calculated outside of CalEEMod.

[(2)]Not calculated (see CO_2e instead).

[(3)]Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-37 Annual Operational GHG Emissions by Source Category, Alternative 5, Private Development

Source Category	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Year 2030	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips	6,688	0.4	0.0	6,697
Landscaping[(1)]	--[(2)]	--	--	1
Natural Gas Use	1,291	0.0	0.0	1,299
Electricity Use	2,412	0.1	0.0	2,421
Water Use and Treatment	531	4.8	0.1	684
Solid Waste Disposal	291	17.2	0.0	720
Total	**11,213**	**22.4**	**0.2**	**11,821**
Year 2035	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips[(3)]	10,570	0.6	0.0	10,584
Landscaping	--	--	--	1
Natural Gas Use	2,324	0.0	0.0	2,338
Electricity Use	4,342	0.2	0.0	4,358
Water Use and Treatment	955	8.6	0.2	1,231
Solid Waste Disposal	523	30.9	0.0	1,296
Total	**18,715**	**40.2**	**0.3**	**19,808**
Year 2050	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**	**(Mt/yr)**
Vehicle Trips[(2)]	17,420	0.9	0.0	17,444
Landscaping	--	--	--	3
Natural Gas Use	5,165	0.1	0.1	5,196
Electricity Use	9,649	0.4	0.1	9,683
Water Use and Treatment	2,123	19.0	0.5	2,736
Solid Waste Disposal	1,162	68.7	0.0	2,879
Total	**35,519**	**89.1**	**0.6**	**37,941**

Legend: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Notes: [(1)]Landscaping emissions were calculated outside of CalEEMod.

[(2)]Not calculated (see CO_2e instead).

[(3)]Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.2-38 Annual Operational GHG Emissions, Alternatives 4 and 5, Transit Center Total Vehicle Trips

Year	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2035	2,143	0.1	0.0	2,145
2050	2,265	0.1	0.0	2,268

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

Table D-A1.2-39 Annual Operational GHG Emissions, Alternatives 4 and 5, Transit Center New Vehicle Trips Relative to Existing Conditions

Year	*CO_2 (MT/yr)*	*CH_4 (MT/yr)*	*N_2O (MT/yr)*	*CO_2e (MT/yr)*
2035	149	0.0	0.0	150
2050	295	0.0	0.0	296

Legend : CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; MT/yr = metric tons per year.

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Attachment 1.3

Maximum Daily Construction Emissions Tables

(CEQA Only)

List of Tables

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Table D-A1.3-1 Maximum Daily Construction Emissions by Source Category and Phase, Alternatives 2 through 5, Navy Development

Source Category [(1)]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Fugitive Dust	Demolition	2021	0.0	0.0	0.0	0.0	9.2	0.0	9.2	1.4	0.0	1.4
Fugitive Dust	Site Preparation	2021	0.0	0.0	0.0	0.0	8.1	0.0	8.1	4.5	0.0	4.5
Fugitive Dust	Grading and Utilities	2021	0.0	0.0	0.0	0.0	3.1	0.0	3.1	1.5	0.0	1.5
Off-Road Equipment	Demolition	2021	0.5	2.0	23.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Site Preparation	2021	0.5	2.0	20.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Grading and Utilities	2021	0.9	3.7	40.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2021	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Building Construction	2021	2.3	11.0	70.7	0.1	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2022	2.2	10.8	70.6	0.1	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2023	2.2	10.6	70.6	0.1	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2024	2.1	10.4	70.5	0.1	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2025	2.0	10.3	70.5	0.1	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Paving	2025	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2025	0.1	0.5	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2025	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2025	317.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haul Trucks	Demolition	2021	0.7	24.1	6.2	0.1	1.6	0.1	1.7	0.4	0.1	0.5
Haul Trucks	Grading and Utilities	2021	2.9	97.0	25.0	0.3	6.6	0.3	6.9	1.8	0.3	2.1
Vendor Trips	Foundation Drilling	2021	0.1	1.6	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Building Construction	2021	0.2	5.5	1.6	0.0	0.4	0.0	0.4	0.1	0.0	0.1
Vendor Trips	Building Construction	2022	0.2	5.2	1.5	0.0	0.4	0.0	0.4	0.1	0.0	0.1
Vendor Trips	Building Construction	2023	0.1	4.1	1.3	0.0	0.4	0.0	0.4	0.1	0.0	0.1
Vendor Trips	Building Construction	2024	0.1	4.0	1.3	0.0	0.4	0.0	0.4	0.1	0.0	0.1
Vendor Trips	Building Construction	2025	0.1	4.0	1.3	0.0	0.4	0.0	0.4	0.1	0.0	0.1
Worker Trips	Demolition	2021	0.1	0.0	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Site Preparation	2021	0.1	0.0	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Grading and Utilities	2021	0.1	0.1	0.8	0.0	0.2	0.0	0.2	0.1	0.0	0.1
Worker Trips	Foundation Drilling	2021	0.1	0.1	0.5	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Building Construction	2021	8.8	5.6	59.3	0.2	18.4	0.1	18.5	4.9	0.1	5.0
Worker Trips	Building Construction	2022	8.3	5.1	55.1	0.2	18.4	0.1	18.5	4.9	0.1	5.0
Worker Trips	Building Construction	2023	7.9	4.7	51.2	0.2	18.4	0.1	18.5	4.9	0.1	5.0
Worker Trips	Building Construction	2024	7.5	4.3	47.9	0.2	18.4	0.1	18.5	4.9	0.1	5.0
Worker Trips	Building Construction	2025	7.2	4.0	44.7	0.2	18.4	0.1	18.5	4.9	0.1	5.0
Worker Trips	Paving	2025	0.0	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Architectural Coating	2025	1.4	0.8	8.9	0.0	3.7	0.0	3.7	1.0	0.0	1.0

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Note : [(1)]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.3-2 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 4 without Mitigation, Private Development

Source Category (1)(2)	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO$_x$ (lb/day)*	*CO (lb/day)*	*SO$_x$ (lb/day)*	*Fugitive PM$_{10}$ (lb/day)*	*Exhaust PM$_{10}$ (lb/day)*	*PM$_{10}$ (lb/day)*	*Fugitive PM$_{2.5}$ (lb/day)*	*Exhaust PM$_{2.5}$ (lb/day)*	*PM$_{2.5}$ (lb/day)*
Fugitive Dust	Demolition	2026	0.0	0.0	0.0	0.0	21.2	0.0	21.2	3.2	0.0	3.2
Fugitive Dust	Site Preparation	2026	0.0	0.0	0.0	0.0	8.1	0.0	8.1	4.5	0.0	4.5
Fugitive Dust	Grading and Utilities	2026	0.0	0.0	0.0	0.0	4.2	0.0	4.2	1.7	0.0	1.7
Fugitive Dust	Grading and Utilities	2030	0.0	0.0	0.0	0.0	4.2	0.0	4.2	1.7	0.0	1.7
Fugitive Dust	Grading and Utilities	2035	0.0	0.0	0.0	0.0	4.2	0.0	4.2	1.7	0.0	1.7
Off-Road Equipment	Demolition	2026	0.5	2.0	23.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Site Preparation	2026	0.5	2.0	20.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Grading and Utilities	2026	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Grading and Utilities	2030	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Grading and Utilities	2035	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Foundation Drilling	2026	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2027	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2030	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2035	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2036	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Building Construction	2026	4.5	23.2	158.5	0.2	0.0	0.7	0.7	0.0	0.7	0.7
Off-Road Equipment	Building Construction	2027	4.5	23.2	158.5	0.2	0.0	0.7	0.7	0.0	0.7	0.7
Off-Road Equipment	Building Construction	2028	4.5	23.2	158.5	0.2	0.0	0.7	0.7	0.0	0.7	0.7
Off-Road Equipment	Building Construction	2029	4.5	23.2	158.5	0.2	0.0	0.7	0.7	0.0	0.7	0.7
Off-Road Equipment	Building Construction	2030	4.0	21.8	158.1	0.3	0.0	0.5	0.5	0.0	0.5	0.5
Off-Road Equipment	Building Construction	2031	4.0	21.8	158.1	0.3	0.0	0.5	0.5	0.0	0.5	0.5
Off-Road Equipment	Building Construction	2032	4.0	21.8	158.1	0.3	0.0	0.5	0.5	0.0	0.5	0.5
Off-Road Equipment	Building Construction	2033	4.0	21.8	158.1	0.3	0.0	0.5	0.5	0.0	0.5	0.5
Off-Road Equipment	Building Construction	2034	4.0	21.8	158.1	0.3	0.0	0.5	0.5	0.0	0.5	0.5
Off-Road Equipment	Building Construction	2035	3.9	21.4	158.0	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2036	3.9	21.4	158.0	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2037	3.9	21.4	158.0	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2038	3.9	21.4	158.0	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2039	3.9	21.4	158.0	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2040	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2041	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2042	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2043	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2044	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2045	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2046	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2047	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2048	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2049	3.9	21.2	157.9	0.3	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Paving	2029	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Paving	2034	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Paving	2049	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2029	0.3	1.2	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2034	0.3	1.2	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2049	0.3	1.2	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2029	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2034	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2049	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2028	1,168.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2029	1,168.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2030	1,171.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table D-A1.3-2 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 4 without Mitigation, Private Development, Continued

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Architectural Coating	Architectural Coating	2031	1,174.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2032	1,177.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2033	1,181.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2034	1,184.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2035	1,184.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2036	1,185.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2037	1,185.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2038	1,186.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2039	1,186.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2040	1,187.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2041	1,187.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2042	1,188.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2043	1,188.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2044	1,188.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2045	1,189.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2046	1,189.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2047	1,190.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2048	1,190.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2049	1,191.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haul Trucks	Demolition	2026	1.1	32.4	13.7	0.2	3.8	0.1	3.8	1.0	0.1	1.1
Haul Trucks	Grading and Utilities	2026	2.5	77.2	32.6	0.4	9.0	0.1	9.1	2.5	0.1	2.6
Haul Trucks	Grading and Utilities	2030	2.5	72.4	34.3	0.4	9.1	0.1	9.3	2.5	0.1	2.6
Haul Trucks	Grading and Utilities	2035	2.4	67.8	34.8	0.4	9.1	0.1	9.2	2.5	0.1	2.6
Vendor Trips	Foundation Drilling	2026	0.0	1.2	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2027	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2030	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2035	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2036	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Building Construction	2026	1.0	35.0	11.1	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2027	1.0	34.5	11.0	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2028	1.0	34.1	10.9	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2029	0.9	33.7	10.8	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2030	0.9	33.3	10.8	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2031	0.9	33.0	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2032	0.9	32.8	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2033	0.9	32.5	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2034	0.9	32.3	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2035	0.9	32.1	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2036	0.9	32.1	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2037	0.9	32.1	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2038	0.9	32.1	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2039	0.9	32.1	10.7	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2040	0.9	31.6	10.6	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2041	0.9	31.6	10.6	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2042	0.9	31.6	10.6	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2043	0.9	31.6	10.6	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2044	0.9	31.6	10.6	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2045	0.9	31.4	10.4	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2046	0.9	31.4	10.4	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2047	0.9	31.4	10.4	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Vendor Trips	Building Construction	2048	0.9	31.4	10.4	0.1	3.3	0.0	3.3	0.9	0.0	1.0

Table D-A1.3-2 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 4 without Mitigation, Private Development, Continued

Source Category [1][2]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Vendor Trips	Building Construction	2049	0.9	31.4	10.4	0.1	3.3	0.0	3.3	0.9	0.0	1.0
Worker Trips	Demolition	2026	0.0	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Site Preparation	2026	0.1	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Grading and Utilities	2026	0.1	0.1	0.7	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Grading and Utilities	2030	0.1	0.0	0.5	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Grading and Utilities	2035	0.1	0.0	0.4	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Foundation Drilling	2026	0.1	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2027	0.1	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2030	0.1	0.0	0.3	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2035	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2036	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Building Construction	2026	10.3	5.5	62.6	0.2	27.3	0.2	27.5	7.2	0.2	7.4
Worker Trips	Building Construction	2027	9.8	5.1	59.1	0.2	27.3	0.2	27.5	7.2	0.1	7.4
Worker Trips	Building Construction	2028	9.4	4.8	56.0	0.2	27.3	0.1	27.5	7.2	0.1	7.4
Worker Trips	Building Construction	2029	8.9	4.5	53.1	0.2	27.3	0.1	27.5	7.2	0.1	7.4
Worker Trips	Building Construction	2030	8.3	4.2	50.4	0.2	27.3	0.1	27.5	7.2	0.1	7.4
Worker Trips	Building Construction	2031	7.7	3.9	47.8	0.2	27.3	0.1	27.4	7.2	0.1	7.4
Worker Trips	Building Construction	2032	7.2	3.7	45.5	0.2	27.3	0.1	27.4	7.2	0.1	7.3
Worker Trips	Building Construction	2033	6.8	3.5	43.6	0.2	27.3	0.1	27.4	7.2	0.1	7.3
Worker Trips	Building Construction	2034	6.4	3.4	41.7	0.2	27.3	0.1	27.4	7.2	0.1	7.3
Worker Trips	Building Construction	2035	2.5	1.4	16.8	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2036	2.5	1.4	16.8	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2037	2.5	1.4	16.8	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2038	2.5	1.4	16.8	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2039	2.5	1.4	16.8	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2040	2.0	1.2	14.7	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2041	2.0	1.2	14.7	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2042	2.0	1.2	14.7	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2043	2.0	1.2	14.7	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2044	2.0	1.2	14.7	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2045	1.8	1.1	13.9	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2046	1.8	1.1	13.9	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2047	1.8	1.1	13.9	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2048	1.8	1.1	13.9	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Building Construction	2049	1.8	1.1	13.9	0.1	11.4	0.0	11.5	3.0	0.0	3.1
Worker Trips	Paving	2029	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Paving	2034	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Paving	2049	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Architectural Coating	2029	1.8	0.9	10.6	0.0	5.5	0.0	5.5	1.4	0.0	1.5
Worker Trips	Architectural Coating	2034	1.3	0.7	8.3	0.0	5.5	0.0	5.5	1.4	0.0	1.5
Worker Trips	Architectural Coating	2049	0.4	0.2	2.8	0.0	2.3	0.0	2.3	0.6	0.0	0.6

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : [1]Daily VOC evaporative emissions from architectural coating were interpolated from 2028-2049.

[2]Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.3-3 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 5 without Mitigation, Private Development

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Fugitive Dust	Demolition	2026	0.0	0.0	0.0	0.0	21.2	0.0	21.2	3.2	0.0	3.2
Fugitive Dust	Site Preparation	2026	0.0	0.0	0.0	0.0	8.1	0.0	8.1	4.5	0.0	4.5
Fugitive Dust	Grading and Utilities	2026	0.0	0.0	0.0	0.0	4.1	0.0	4.1	1.7	0.0	1.7
Fugitive Dust	Grading and Utilities	2030	0.0	0.0	0.0	0.0	4.1	0.0	4.1	1.7	0.0	1.7
Fugitive Dust	Grading and Utilities	2035	0.0	0.0	0.0	0.0	4.1	0.0	4.1	1.7	0.0	1.7
Off-Road Equipment	Demolition	2026	0.5	2.0	23.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Site Preparation	2026	0.5	2.0	20.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Grading and Utilities	2026	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Grading and Utilities	2030	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Grading and Utilities	2035	1.3	5.4	55.3	0.1	0.0	0.2	0.2	0.0	0.2	0.2
Off-Road Equipment	Foundation Drilling	2026	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2027	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2030	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2035	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Foundation Drilling	2036	0.4	1.8	14.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Off-Road Equipment	Building Construction	2026	3.5	18.0	123.3	0.2	0.0	0.6	0.6	0.0	0.6	0.6
Off-Road Equipment	Building Construction	2027	3.5	18.0	123.3	0.2	0.0	0.6	0.6	0.0	0.6	0.6
Off-Road Equipment	Building Construction	2028	3.5	18.0	123.3	0.2	0.0	0.6	0.6	0.0	0.6	0.6
Off-Road Equipment	Building Construction	2029	3.5	18.0	123.3	0.2	0.0	0.6	0.6	0.0	0.6	0.6
Off-Road Equipment	Building Construction	2030	3.1	17.0	123.0	0.2	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2031	3.1	17.0	123.0	0.2	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2032	3.1	17.0	123.0	0.2	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2033	3.1	17.0	123.0	0.2	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2034	3.1	17.0	123.0	0.2	0.0	0.4	0.4	0.0	0.4	0.4
Off-Road Equipment	Building Construction	2035	3.0	16.7	122.9	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2036	3.0	16.7	122.9	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2037	3.0	16.7	122.9	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2038	3.0	16.7	122.9	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2039	3.0	16.7	122.9	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2040	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2041	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2042	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2043	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2044	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2045	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2046	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2047	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2048	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Building Construction	2049	3.0	16.5	122.8	0.2	0.0	0.3	0.3	0.0	0.3	0.3
Off-Road Equipment	Paving	2029	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Paving	2034	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Paving	2049	0.3	1.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2029	0.2	0.9	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2034	0.2	0.9	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Road Equipment	Architectural Coating	2049	0.2	0.9	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2029	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2034	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paving Off-Gas	Paving	2049	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2028	924.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2029	924.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2030	927.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table D-A1.3-3 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 5 without Mitigation, Private Development, Continued

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Architectural Coating	Architectural Coating	2031	929.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2032	932.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2033	934.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2034	937.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2035	937.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2036	937.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2037	938.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2038	938.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2039	939.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2040	939.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2041	939.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2042	940.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2043	940.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2044	941.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2045	941.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2046	941.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2047	942.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2048	942.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	Architectural Coating	2049	942.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haul Trucks	Demolition	2026	1.1	32.4	13.7	0.2	3.8	0.1	3.8	1.0	0.1	1.1
Haul Trucks	Grading and Utilities	2026	2.2	67.1	28.3	0.3	7.8	0.1	7.9	2.1	0.1	2.3
Haul Trucks	Grading and Utilities	2030	2.1	63.0	29.9	0.3	7.9	0.1	8.1	2.2	0.1	2.3
Haul Trucks	Grading and Utilities	2035	2.1	58.9	30.3	0.3	7.9	0.1	8.0	2.2	0.1	2.3
Vendor Trips	Foundation Drilling	2026	0.0	1.2	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2027	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2030	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2035	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Foundation Drilling	2036	0.0	1.1	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Vendor Trips	Building Construction	2026	0.8	28.2	9.0	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2027	0.8	27.8	8.9	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2028	0.8	27.5	8.8	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2029	0.8	27.2	8.7	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2030	0.8	26.9	8.7	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2031	0.7	26.7	8.7	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2032	0.7	26.4	8.7	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2033	0.7	26.2	8.7	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2034	0.7	26.1	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2035	0.7	25.9	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2036	0.7	25.9	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2037	0.7	25.9	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2038	0.7	25.9	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2039	0.7	25.9	8.6	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2040	0.7	25.5	8.5	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2041	0.7	25.5	8.5	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2042	0.7	25.5	8.5	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2043	0.7	25.5	8.5	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2044	0.7	25.5	8.5	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2045	0.7	25.3	8.4	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2046	0.7	25.3	8.4	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2047	0.7	25.3	8.4	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Vendor Trips	Building Construction	2048	0.7	25.3	8.4	0.1	2.6	0.0	2.7	0.8	0.0	0.8

Table D-A1.3-3 Maximum Daily Construction Emissions by Source Category and Phase, Alternative 5 without Mitigation, Private Development, Continued

Source Category [(1)(2)]	*Construction Phase*	*Year*	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Vendor Trips	Building Construction	2049	0.7	25.3	8.4	0.1	2.6	0.0	2.7	0.8	0.0	0.8
Worker Trips	Demolition	2026	0.0	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Site Preparation	2026	0.1	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Grading and Utilities	2026	0.1	0.1	0.7	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Grading and Utilities	2030	0.1	0.0	0.5	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Grading and Utilities	2035	0.1	0.0	0.4	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Worker Trips	Foundation Drilling	2026	0.1	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2027	0.1	0.0	0.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2030	0.1	0.0	0.3	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2035	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Foundation Drilling	2036	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Worker Trips	Building Construction	2026	9.3	5.0	56.9	0.2	24.9	0.2	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2027	9.0	4.7	53.8	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2028	8.5	4.4	51.0	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2029	8.1	4.1	48.3	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2030	7.6	3.8	45.8	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2031	7.0	3.6	43.5	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2032	6.6	3.4	41.4	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2033	6.2	3.2	39.7	0.2	24.9	0.1	25.0	6.6	0.1	6.7
Worker Trips	Building Construction	2034	5.8	3.1	38.0	0.2	24.9	0.1	24.9	6.6	0.1	6.7
Worker Trips	Building Construction	2035	2.0	1.1	13.2	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2036	2.0	1.1	13.2	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2037	2.0	1.1	13.2	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2038	2.0	1.1	13.2	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2039	2.0	1.1	13.2	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2040	1.6	0.9	11.5	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2041	1.6	0.9	11.5	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2042	1.6	0.9	11.5	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2043	1.6	0.9	11.5	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2044	1.6	0.9	11.5	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2045	1.4	0.9	10.9	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2046	1.4	0.9	10.9	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2047	1.4	0.9	10.9	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2048	1.4	0.9	10.9	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Building Construction	2049	1.4	0.9	10.9	0.1	9.0	0.0	9.0	2.4	0.0	2.4
Worker Trips	Paving	2029	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Paving	2034	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Paving	2049	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Worker Trips	Architectural Coating	2029	1.6	0.8	9.7	0.0	5.0	0.0	5.0	1.3	0.0	1.3
Worker Trips	Architectural Coating	2034	1.2	0.6	7.6	0.0	5.0	0.0	5.0	1.3	0.0	1.3
Worker Trips	Architectural Coating	2049	0.3	0.2	2.2	0.0	1.8	0.0	1.8	0.5	0.0	0.5

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : (1) Daily VOC evaporative emissions from architectural coating were interpolated from 2028-2049.

(2) Haul Trucks and Vendor Trips are both classified as Truck Trips in the EIS tables.

Table D-A1.3-4 Maximum Daily Construction Emissions by Year, Alternative 4 without Mitigation

Year [(1)(2)(3)]	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
2021	15.1	122.8	197.2	0.7	28.7	1.0	29.7	8.4	1.0	9.4
2022	10.7	21.1	127.1	0.3	18.7	0.5	19.3	5.0	0.5	5.5
2023	10.2	19.4	123.0	0.3	18.7	0.5	19.2	5.0	0.5	5.5
2024	9.7	18.8	119.5	0.3	18.7	0.5	19.2	5.0	0.5	5.4
2025	328.7	19.5	133.9	0.3	22.4	0.5	22.9	5.9	0.5	6.4
2026	20.2	149.1	335.4	1.1	44.3	1.3	45.6	12.5	1.3	13.7
2027	15.9	65.6	243.3	0.6	30.9	1.0	31.8	8.3	1.0	9.2
2028	1,185.5	64.0	251.7	0.6	36.0	1.0	37.0	9.6	0.9	10.6
2029	1,185.0	63.2	248.7	0.6	36.0	0.9	37.0	9.6	0.9	10.6
2030	1,186.9	140.0	324.0	1.1	44.4	1.0	45.5	12.5	1.0	13.5
2031	1,189.3	60.6	241.9	0.7	36.0	0.7	36.8	9.6	0.7	10.3
2032	1,191.8	60.1	239.2	0.7	36.0	0.7	36.7	9.6	0.7	10.3
2033	1,194.4	59.6	236.8	0.6	36.0	0.7	36.7	9.6	0.7	10.3
2034	1,197.0	59.2	234.5	0.6	36.0	0.7	36.7	9.6	0.7	10.3
2035	1,193.4	130.8	290.5	1.0	28.5	0.8	29.3	8.3	0.8	9.1
2036	1,193.8	57.6	208.7	0.5	19.7	0.5	20.3	5.3	0.5	5.8
2037	1,194.2	56.5	208.3	0.5	19.5	0.5	20.1	5.3	0.5	5.8
2038	1,194.7	56.5	207.9	0.5	19.3	0.5	19.8	5.2	0.5	5.7
2039	1,195.1	56.4	207.5	0.5	19.1	0.5	19.6	5.1	0.5	5.7
2040	1,195.0	55.5	204.9	0.5	18.9	0.5	19.4	5.1	0.5	5.6
2041	1,195.4	55.5	204.5	0.5	18.7	0.5	19.2	5.0	0.5	5.5
2042	1,195.8	55.5	204.2	0.5	18.5	0.5	19.0	5.0	0.5	5.5
2043	1,196.2	55.5	203.8	0.5	18.3	0.5	18.8	4.9	0.5	5.4
2044	1,196.6	55.4	203.4	0.5	18.0	0.5	18.5	4.9	0.5	5.4
2045	1,196.8	55.1	202.1	0.5	17.8	0.5	18.3	4.8	0.5	5.3
2046	1,197.3	55.1	201.7	0.5	17.6	0.5	18.1	4.7	0.5	5.2
2047	1,197.7	55.1	201.4	0.5	17.4	0.5	17.9	4.7	0.5	5.2
2048	1,198.1	55.0	201.0	0.5	17.2	0.5	17.7	4.6	0.5	5.1
2049	1,198.5	55.0	200.6	0.5	17.0	0.5	17.5	4.6	0.5	5.1
2050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	**1,198.5**	**149.1**	**335.4**	**1.1**	**44.4**	**1.3**	**45.6**	**12.5**	**1.3**	**13.7**

Legend : VOC = volatile organic compounds; NOx = nitrogen oxides; CO = carbon monoxide; SOx = sulfur oxides; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]For Navy construction, this table presents the maximum emission rate from the following sets of overlapping phases: (a) demolition and site preparation; (b) grading and foundation drilling; (c) foundation drilling and building construction; (d) grading and building construction; (e) building construction and paving; and (f) building construction and architectural coating.

[(3)]For Private construction, this table presents the maximum emission rate from the following sets of overlapping phases: (a) demolition and site preparation ; (b) grading, foundation drilling, and building construction; (c) building construction and paving; and (d) building construction and architectural coating.

Table D-A1.3-5 Maximum Daily Construction Emissions by Year, Alternative 5 without Mitigation

Year [(1)(2)(3)]	***VOC (lb/day)***	***NO_x (lb/day)***	***CO (lb/day)***	***SO_x (lb/day)***	***Fugitive PM_{10} (lb/day)***	***Exhaust PM_{10} (lb/day)***	***PM_{10} (lb/day)***	***Fugitive $PM_{2.5}$ (lb/day)***	***Exhaust $PM_{2.5}$ (lb/day)***	***$PM_{2.5}$ (lb/day)***
2021	15.1	122.8	197.2	0.7	28.7	1.0	29.7	8.4	1.0	9.4
2022	10.7	21.1	127.1	0.3	18.7	0.5	19.3	5.0	0.5	5.5
2023	10.2	19.4	123.0	0.3	18.7	0.5	19.2	5.0	0.5	5.5
2024	9.7	18.8	119.5	0.3	18.7	0.5	19.2	5.0	0.5	5.4
2025	328.7	19.5	133.9	0.3	22.4	0.5	22.9	5.9	0.5	6.4
2026	17.7	126.7	288.3	1.0	40.0	1.1	41.1	11.3	1.1	12.4
2027	13.8	53.3	200.8	0.5	27.8	0.8	28.5	7.4	0.8	8.2
2028	939.5	51.5	204.8	0.5	32.5	0.8	33.2	8.7	0.8	9.4
2029	939.0	50.9	202.1	0.5	32.5	0.8	33.2	8.7	0.7	9.4
2030	940.5	118.9	277.9	1.0	40.1	0.9	41.0	11.3	0.9	12.2
2031	942.3	48.7	196.0	0.5	32.5	0.6	33.0	8.7	0.6	9.2
2032	944.2	48.3	193.6	0.5	32.5	0.6	33.0	8.7	0.5	9.2
2033	946.2	47.9	191.4	0.5	32.5	0.5	33.0	8.7	0.5	9.2
2034	948.2	47.5	189.3	0.5	32.5	0.5	33.0	8.7	0.5	9.2
2035	944.6	110.8	245.3	0.8	24.2	0.7	24.9	7.1	0.7	7.8
2036	944.9	46.4	163.6	0.4	16.1	0.4	16.6	4.3	0.4	4.8
2037	945.2	45.0	163.3	0.4	15.9	0.4	16.3	4.3	0.4	4.7
2038	945.6	44.9	162.9	0.4	15.7	0.4	16.1	4.2	0.4	4.6
2039	945.9	44.9	162.5	0.4	15.5	0.4	15.9	4.2	0.4	4.6
2040	945.8	44.2	160.4	0.4	15.3	0.4	15.7	4.1	0.4	4.5
2041	946.1	44.2	160.0	0.4	15.1	0.4	15.5	4.1	0.4	4.4
2042	946.4	44.1	159.7	0.4	14.9	0.4	15.3	4.0	0.4	4.4
2043	946.7	44.1	159.3	0.4	14.6	0.4	15.0	3.9	0.4	4.3
2044	947.1	44.1	159.0	0.4	14.4	0.4	14.8	3.9	0.4	4.3
2045	947.2	43.8	157.8	0.4	14.2	0.4	14.6	3.8	0.4	4.2
2046	947.5	43.8	157.5	0.4	14.0	0.4	14.4	3.8	0.4	4.2
2047	947.8	43.8	157.1	0.4	13.8	0.4	14.2	3.7	0.4	4.1
2048	948.2	43.7	156.8	0.4	13.6	0.4	14.0	3.7	0.4	4.0
2049	948.5	43.9	158.8	0.4	13.4	0.4	13.8	3.6	0.4	4.0
2050	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	**948.5**	**126.7**	**288.3**	**1.0**	**40.1**	**1.1**	**41.1**	**11.3**	**1.1**	**12.4**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : [(1)]Navy development construction would occur 2021-2025. Private development construction would occur 2026-2049.

[(2)]For Navy construction, this table presents the maximum emission rate from the following sets of overlapping phases: (a) demolition and site preparation; (b) grading and foundation drilling; (c) foundation drilling and building construction; (d) grading and building construction; (e) building construction and paving; and (f) building construction and architectural coating.

[(3)]For Private construction, this table presents the maximum emission rate from the following sets of overlapping phases: (a) demolition and site preparation ; (b) grading, foundation drilling, and building construction; (c) building construction and paving; and (d) building construction and architectural coating.

Table D-A1.3-6 Emissions Adjustment for Construction Daily VOC, Alternative 4 with Mitigation

Year	*Unmitigated VOC (lb/day)*	*Mitigated VOC (lb/day)*	*VOC Adjustment (lb/day)* [(1)]
2021	0.0	0.0	0.0
2022	0.0	0.0	0.0
2023	0.0	0.0	0.0
2024	0.0	0.0	0.0
2025	317.9	119.0	-198.9
2026	0.0	0.0	0.0
2027	0.0	0.0	0.0
2028	1,168.5	119.0	-1,049.5
2029	1,168.5	119.0	-1,049.5
2030	1,171.7	119.0	-1,052.7
2031	1,174.8	119.0	-1,055.8
2032	1,177.9	119.0	-1,058.9
2033	1,181.0	119.0	-1,062.0
2034	1,184.1	119.0	-1,065.1
2035	1,184.6	119.0	-1,065.6
2036	1,185.1	119.0	-1,066.1
2037	1,185.6	119.0	-1,066.6
2038	1,186.0	119.0	-1,067.0
2039	1,186.5	119.0	-1,067.5
2040	1,187.0	119.0	-1,068.0
2041	1,187.5	119.0	-1,068.5
2042	1,188.0	119.0	-1,069.0
2043	1,188.5	119.0	-1,069.5
2044	1,188.9	119.0	-1,069.9
2045	1,189.4	119.0	-1,070.4
2046	1,189.9	119.0	-1,070.9
2047	1,190.4	119.0	-1,071.4
2048	1,190.9	119.0	-1,071.9
2049	1,191.3	119.0	-1,072.3
2050	0.0	0.0	0.0

Legend : VOC = volatile organic compounds.

Note : [(1)]The adjustment converts the unmitigated daily VOC emissions into the mitigated daily VOC emissions. The mitigation measure limits daily architectural coating VOC emissions to 119 pounds per day.

Table D-A1.3-7 Emissions Adjustment for Construction Daily VOC, Alternative 5 with Mitigation

Year	*Unmitigated VOC (lb/day)*	*Mitigated VOC (lb/day)*	*VOC Adjustment (lb/day)* [(1)]
2021	0.0	0.0	0.0
2022	0.0	0.0	0.0
2023	0.0	0.0	0.0
2024	0.0	0.0	0.0
2025	317.9	119.0	-198.9
2026	0.0	0.0	0.0
2027	0.0	0.0	0.0
2028	924.8	119.0	-805.8
2029	924.8	119.0	-805.8
2030	927.3	119.0	-808.3
2031	929.8	119.0	-810.8
2032	932.2	119.0	-813.2
2033	934.7	119.0	-815.7
2034	937.2	119.0	-818.2
2035	937.5	119.0	-818.5
2036	937.9	119.0	-818.9
2037	938.3	119.0	-819.3
2038	938.7	119.0	-819.7
2039	939.1	119.0	-820.1
2040	939.5	119.0	-820.5
2041	939.8	119.0	-820.8
2042	940.2	119.0	-821.2
2043	940.6	119.0	-821.6
2044	941.0	119.0	-822.0
2045	941.4	119.0	-822.4
2046	941.7	119.0	-822.7
2047	942.1	119.0	-823.1
2048	942.5	119.0	-823.5
2049	942.9	119.0	-823.9
2050	0.0	0.0	0.0

Legend : VOC = volatile organic compounds.

Note : [(1)]The adjustment converts the unmitigated daily VOC emissions into the mitigated daily VOC emissions. The mitigation measure limits daily architectural coating VOC emissions to 119 pounds per day. The unmitigated architectural coating emissions are from Tables B3.1-51 and B3.1-52.

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Attachment 1.4

Maximum Daily Operational Emissions Tables

(CEQA Only)

List of Tables

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Table D-A1.4-1 Maximum Daily Operational Emissions by Source Category, 2020 Existing Conditions

Source Category	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
Vehicle Trips	13.3	56.1	154.6	0.51	41.6	0.5	42.1	11.1	0.5	11.6
Consumer Products	21.4	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	2.1	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	4.4	21.9	21.6	0.03	0.0	1.4	1.4	0.0	1.4	1.4
Natural Gas Use	0.5	4.9	4.1	0.03	0.0	0.4	0.4	0.0	0.4	0.4
Total	**41.8**	**82.9**	**180.2**	**0.57**	**41.6**	**2.3**	**43.9**	**11.1**	**2.2**	**13.3**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Table D-A1.4-2 Maximum Daily Operational Emissions by Source Category, Alternatives 2 through 5, Navy Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2026	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	5.7	21.9	64.8	0.2	24.8	0.2	25.0	6.6	0.2	6.8
Consumer Products	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment(2)	0.6	2.6	12.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	0.6	5.3	4.4	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	**26.6**	**29.8**	**83.9**	**0.3**	**24.8**	**0.7**	**25.5**	**6.6**	**0.7**	**7.3**
Year 2030	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	4.8	19.3	54.0	0.2	23.8	0.1	23.9	6.3	0.1	6.5
Consumer Products	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.6	1.9	12.4	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	0.6	5.3	4.4	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	**25.7**	**26.5**	**73.2**	**0.3**	**23.8**	**0.6**	**24.4**	**6.3**	**0.6**	**6.9**
Year 2035	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	4.0	17.8	45.7	0.2	22.4	0.1	22.5	6.0	0.1	6.1
Consumer Products	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.6	1.9	12.4	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	0.6	5.3	4.4	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	**24.9**	**25.0**	**64.9**	**0.2**	**22.4**	**0.6**	**23.0**	**6.0**	**0.6**	**6.5**
Year 2050	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	3.0	16.9	34.4	0.2	18.0	0.1	18.1	4.8	0.1	4.9
Consumer Products	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Equipment	0.6	1.9	12.4	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	0.6	5.3	4.4	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	**24.0**	**24.1**	**53.6**	**0.2**	**18.0**	**0.5**	**18.5**	**4.8**	**0.5**	**5.3**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)CalEEMod output for operational equipment was adjusted to reflect all off-road diesel equipment greater than 50 hp meeting Tier 4 standards in all analysis years.

Table D-A1.4-3 Maximum Daily Operational Emissions by Source Category, Alternative 4, Private Development

Source Category	*VOC*	*NO_x*	*CO*	*SO_x*	*Fugitive PM_{10}*	*Exhaust PM_{10}*	*PM_{10}*	*Fugitive $PM_{2.5}$*	*Exhaust $PM_{2.5}$*	*$PM_{2.5}$*
Year 2030	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	17.5	69.8	161.1	0.6	61.2	0.4	61.6	16.4	0.4	16.7
Consumer Products	48.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	1.4	0.1	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.9	7.9	4.7	0.0	0.0	0.6	0.6	0.0	0.6	0.6
Total	**74.4**	**77.8**	**173.5**	**0.6**	**61.2**	**1.0**	**62.3**	**16.4**	**1.0**	**17.4**
Year 2035	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips(2)	25.6	117.1	239.8	0.9	99.4	0.5	99.9	26.6	0.5	27.0
Consumer Products	87.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	2.4	0.1	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	1.6	14.2	8.4	0.1	0.0	1.1	1.1	0.0	1.1	1.1
Total	**128.0**	**131.5**	**262.0**	**1.0**	**99.4**	**1.6**	**101.1**	**26.6**	**1.6**	**28.2**
Year 2050	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips(1)	41.4	252.5	378.2	1.5	151.2	0.6	151.7	40.4	0.5	40.9
Consumer Products	194.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	5.4	0.3	30.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	3.6	31.5	18.7	0.2	0.0	2.5	2.5	0.0	2.5	2.5
Total	**269.1**	**284.4**	**427.5**	**1.7**	**151.2**	**3.1**	**154.3**	**40.4**	**3.1**	**43.5**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.4-4 Maximum Daily Operational Emissions by Source Category, Alternative 5, Private Development

Source Category	***VOC***	***NO_x***	***CO***	***SO_x***	***Fugitive PM_{10}***	***Exhaust PM_{10}***	***PM_{10}***	***Fugitive $PM_{2.5}$***	***Exhaust $PM_{2.5}$***	***$PM_{2.5}$***
Year 2030	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips	13.8	55.0	126.7	0.5	48.0	0.3	48.3	12.8	0.3	13.1
Consumer Products	38.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping(1)	1.3	0.1	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	0.7	6.3	3.7	0.0	0.0	0.5	0.5	0.0	0.5	0.5
Total	**58.9**	**61.3**	**137.7**	**0.5**	**48.0**	**0.8**	**48.9**	**12.8**	**0.8**	**13.6**
Year 2035	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips(2)	20.2	92.8	190.7	0.7	79.4	0.4	79.8	21.2	0.4	21.6
Consumer Products	69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	2.3	0.1	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Use	1.3	11.3	6.7	0.1	0.0	0.9	0.9	0.0	0.9	0.9
Total	**101.4**	**104.2**	**210.6**	**0.8**	**79.4**	**1.3**	**80.7**	**21.2**	**1.3**	**22.5**
Year 2050	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**	**(lb/day)**
Vehicle Trips(1)	33.0	200.8	305.8	1.2	124.7	0.5	125.2	33.3	0.4	33.8
Consumer Products	153.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Architectural Coating	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landscaping	5.0	0.3	29.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Natural Gas Use	2.9	25.0	14.8	0.2	0.0	2.0	2.0	0.0	2.0	2.0
Total	**213.4**	**226.2**	**350.0**	**1.4**	**124.7**	**2.5**	**127.2**	**33.3**	**2.5**	**35.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Notes : (1)Landscaping emissions were calculated outside of CalEEMod.

(2)Emissions from transit center vehicle trips are presented in a separate table and therefore are not included here.

Table D-A1.4-5 Maximum Daily Operational Emissions Interpolated by Year, Alternatives 2 through 5, Navy Development

Year [(1)]	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*PM_{10} (lb/day)*	*$PM_{2.5}$ (lb/day)*
2026	26.6	29.8	83.9	0.30	25.5	7.3
2027	26.4	29.0	81.2	0.29	25.2	7.2
2028	26.2	28.2	78.6	0.28	24.9	7.1
2029	25.9	27.4	75.9	0.28	24.7	7.0
2030	25.7	26.5	73.2	0.27	24.4	6.9
2031	25.6	26.2	71.6	0.26	24.1	6.9
2032	25.4	25.9	69.9	0.26	23.8	6.8
2033	25.2	25.6	68.2	0.26	23.5	6.7
2034	25.1	25.3	66.5	0.25	23.3	6.6
2035	24.9	25.0	64.9	0.25	23.0	6.5
2036	24.9	24.9	64.1	0.24	22.7	6.5
2037	24.8	24.9	63.4	0.24	22.4	6.4
2038	24.7	24.8	62.6	0.24	22.1	6.3
2039	24.7	24.7	61.9	0.24	21.8	6.2
2040	24.6	24.7	61.1	0.23	21.5	6.1
2041	24.5	24.6	60.4	0.23	21.2	6.1
2042	24.5	24.6	59.6	0.23	20.9	6.0
2043	24.4	24.5	58.9	0.23	20.6	5.9
2044	24.4	24.5	58.1	0.22	20.3	5.8
2045	24.3	24.4	57.4	0.22	20.0	5.7
2046	24.2	24.3	56.6	0.22	19.7	5.7
2047	24.2	24.3	55.9	0.22	19.4	5.6
2048	24.1	24.2	55.1	0.21	19.1	5.5
2049	24.0	24.2	54.4	0.21	18.8	5.4
2050	24.0	24.1	53.6	0.21	18.5	5.3
Maximum	**26.6**	**29.8**	**83.9**	**0.30**	**25.5**	**7.3**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Note : [(1)]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly. Emissions before 2026 were assumed to be equal to the No Action Alternative.

Table D-A1.4-6 Maximum Daily Operational Emissions Interpolated by Year, Alternative 4, Private Development

Year (1)	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*PM_{10} (lb/day)*	*$PM_{2.5}$ (lb/day)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	24.8	25.9	57.8	0.21	20.8	5.8
2029	49.6	51.8	115.6	0.43	41.5	11.6
2030	74.4	77.8	173.5	0.64	62.3	17.4
2031	85.1	88.5	191.2	0.71	70.0	19.5
2032	95.9	99.3	208.9	0.79	77.8	21.7
2033	106.6	110.0	226.6	0.86	85.5	23.8
2034	117.3	120.7	244.3	0.93	93.3	26.0
2035	128.0	131.5	262.0	1.00	101.1	28.2
2036	137.4	141.7	273.1	1.05	104.6	29.2
2037	146.8	151.9	284.1	1.09	108.2	30.2
2038	156.2	162.1	295.1	1.13	111.7	31.2
2039	165.6	172.3	306.2	1.18	115.3	32.2
2040	175.0	182.5	317.2	1.22	118.8	33.3
2041	184.5	192.6	328.2	1.27	122.4	34.3
2042	193.9	202.8	339.3	1.31	125.9	35.3
2043	203.3	213.0	350.3	1.35	129.5	36.3
2044	212.7	223.2	361.3	1.40	133.0	37.3
2045	222.1	233.4	372.4	1.44	136.6	38.4
2046	231.5	243.6	383.4	1.48	140.1	39.4
2047	240.9	253.8	394.4	1.53	143.7	40.4
2048	250.3	264.0	405.5	1.57	147.2	41.4
2049	259.7	274.2	416.5	1.62	150.8	42.5
2050	269.1	284.4	427.5	1.66	154.3	43.5
Maximum	**269.1**	**284.4**	**427.5**	**1.66**	**154.3**	**43.5**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Note : (1)Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

Table D-A1.4-7 Maximum Daily Operational Emissions Interpolated by Year, Alternative 5, Private Development

Year [(1)]	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*PM_{10} (lb/day)*	*$PM_{2.5}$ (lb/day)*
2026	0.0	0.0	0.0	0.00	0.0	0.0
2027	0.0	0.0	0.0	0.00	0.0	0.0
2028	19.6	20.4	45.9	0.17	16.3	4.5
2029	39.2	40.9	91.8	0.34	32.6	9.1
2030	58.9	61.3	137.7	0.50	48.9	13.6
2031	67.4	69.9	152.3	0.56	55.2	15.4
2032	75.9	78.5	166.9	0.62	61.6	17.2
2033	84.4	87.0	181.4	0.68	68.0	18.9
2034	92.9	95.6	196.0	0.74	74.3	20.7
2035	101.4	104.2	210.6	0.80	80.7	22.5
2036	108.9	112.3	219.9	0.84	83.8	23.4
2037	116.3	120.5	229.2	0.87	86.9	24.3
2038	123.8	128.6	238.5	0.91	90.0	25.2
2039	131.3	136.7	247.8	0.95	93.1	26.0
2040	138.7	144.9	257.0	0.98	96.2	26.9
2041	146.2	153.0	266.3	1.02	99.3	27.8
2042	153.7	161.1	275.6	1.06	102.4	28.7
2043	161.1	169.3	284.9	1.10	105.5	29.6
2044	168.6	177.4	294.2	1.13	108.6	30.5
2045	176.1	185.5	303.5	1.17	111.7	31.4
2046	183.5	193.7	312.8	1.21	114.8	32.2
2047	191.0	201.8	322.1	1.24	117.9	33.1
2048	198.5	209.9	331.4	1.28	121.0	34.0
2049	205.9	218.1	340.7	1.32	124.1	34.9
2050	213.4	226.2	350.0	1.35	127.2	35.8
Maximum	**213.4**	**226.2**	**350.0**	**1.35**	**127.2**	**35.8**

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Note : [(1)]Operational emissions between years 2027, 2030, 2035, and 2050 were interpolated linearly. Private development occupancy is not expected before 2028; therefore, operational emissions in 2021-2027 were set to zero.

Table D-A1.4-8 Maximum Daily Operational Emissions, Alternatives 4 and 5, Transit Center New Vehicle Trips Relative to Existing Conditions (CEQA)

Year	*VOC (lb/day)*	*NO_x (lb/day)*	*CO (lb/day)*	*SO_x (lb/day)*	*Fugitive PM_{10} (lb/day)*	*Exhaust PM_{10} (lb/day)*	*PM_{10} (lb/day)*	*Fugitive $PM_{2.5}$ (lb/day)*	*Exhaust $PM_{2.5}$ (lb/day)*	*$PM_{2.5}$ (lb/day)*
2035	0.2	0.8	2.2	0.0	1.1	0.0	1.1	0.3	0.0	0.3
2050	0.3	1.7	3.9	0.0	2.1	0.0	2.1	0.6	0.0	0.6

Legend : VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; lb/day = pounds per day.

Attachment 2

CalEEMod Files

Available in electronic format upon request

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Attachment 2.1

CalEEMod Files – Annual Emissions

Available in electronic format upon request

List of Files

Root Filename	*Description*
CalEEMod Exist 2020 Ops	Existing Conditions - OTC - 2020 Operation
CalEEMod NoAct 2026 Ops	No Action Alternative - OTC - 2026 Operation
CalEEMod NoAct 2030 Ops	No Action Alternative - OTC - 2030 Operation
CalEEMod NoAct 2035 Ops	No Action Alternative - OTC - 2035 Operation
CalEEMod NoAct 2050 Ops	No Action Alternative - OTC - 2050 Operation
CalEEMod A1_Nav Const	Alternative 1 - Navy Development – Construction
CalEEMod A1_Nav 2026 Ops	Alternative 1 - Navy Development - 2026 Operation
CalEEMod A1_Nav 2030 Ops	Alternative 1 - Navy Development - 2030 Operation
CalEEMod A1_Nav 2035 Ops	Alternative 1 - Navy Development - 2035 Operation
CalEEMod A1_Nav 2050 Ops	Alternative 1 - Navy Development - 2050 Operation
CalEEMod A1_Nav Tier 4 Operational Equip	Alternative 1 - Navy Development - Tier 4 Operational Mobile Equipment
CalEEMod A2-5_Nav 2026 Ops & Const	Alternatives 2 through 5 - Navy Development - Construction and 2026 Operation
CalEEMod A2-5_Nav 2030 Ops	Alternatives 2 through 5 - Navy Development - 2030 Operation
CalEEMod A2-5_Nav 2035 Ops	Alternatives 2 through 5 - Navy Development - 2035 Operation
CalEEMod A2-5_Nav 2050 Ops	Alternatives 2 through 5 - Navy Development - 2050 Operation
CalEEMod A2-5_Nav Tier 4 Operational Equip	Alternatives 2 through 5 - Navy Development - Tier 4 Operational Mobile Equipment
CalEEMod A2_Priv 2030 Ops	Alternative 2 - Private Development - 2030 Operation
CalEEMod A2_Priv 2035 Ops	Alternative 2 - Private Development - 2035 Operation
CalEEMod A2_Priv 2050 Ops & Const	Alternative 2 - Private Development - Construction and 2050 Operation
CalEEMod A3_Priv 2030 Ops	Alternative 3 - Private Development - 2030 Operation
CalEEMod A3_Priv 2035 Ops	Alternative 3 - Private Development - 2035 Operation
CalEEMod A3_Priv 2050 Ops & Const	Alternative 3 - Private Development - Construction and 2050 Operation
CalEEMod A4_Priv 2030 Ops	Alternative 4 - Private Development - 2030 Operation
CalEEMod A4_Priv 2035 Ops	Alternative 4 - Private Development - 2035 Operation
CalEEMod A4_Priv 2050 Ops & Const	Alternative 4 - Private Development - Construction and 2050 Operation
CalEEMod A4-5_TC_Abs 2035 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2035 Operation - Vehicle Trips Only - Absolute Trips
CalEEMod A4-5_TC_Abs 2050 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2050 Operation - Vehicle Trips Only - Absolute Trips
CalEEMod A4-5_TC_Inc 2035 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2035 Operation - Vehicle Trips Only - New Trips Relative to Existing (CEQA Only)
CalEEMod A4-5_TC_Inc 2050 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2050 Operation - Vehicle Trips Only - New Trips Relative to Existing (CEQA Only)
CalEEMod A5_Priv 2030 Ops	Alternative 5 - Private Development - 2030 Operation
CalEEMod A5_Priv 2035 Ops	Alternative 5 - Private Development - 2035 Operation
CalEEMod A5_Priv 2050 Ops & Const	Alternative 5 - Private Development - Construction and 2050 Operation

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Attachment 2.2

CalEEMod Files – Daily Emissions

(CEQA Only)

Available in electronic format upon request

List of Files

Root Filename	***Description***
CalEEMod Exist 2020 Ops	Existing Conditions - OTC - 2020 Operation
CalEEMod NoAct 2026 Ops	No Action Alternative - OTC - 2026 Operation
CalEEMod NoAct 2030 Ops	No Action Alternative - OTC - 2030 Operation
CalEEMod NoAct 2035 Ops	No Action Alternative - OTC - 2035 Operation
CalEEMod NoAct 2050 Ops	No Action Alternative - OTC - 2050 Operation
CalEEMod A1_Nav Const	Alternative 1 - Navy Development – Construction
CalEEMod A1_Nav 2026 Ops	Alternative 1 - Navy Development - 2026 Operation
CalEEMod A1_Nav 2030 Ops	Alternative 1 - Navy Development - 2030 Operation
CalEEMod A1_Nav 2035 Ops	Alternative 1 - Navy Development - 2035 Operation
CalEEMod A1_Nav 2050 Ops	Alternative 1 - Navy Development - 2050 Operation
CalEEMod A1_Nav Tier 4 Operational Equip	Alternative 1 - Navy Development - Tier 4 Operational Mobile Equipment
CalEEMod A2-5_Nav 2026 Ops & Const	Alternatives 2 through 5 - Navy Development - Construction and 2026 Operation
CalEEMod A2-5_Nav 2030 Ops	Alternatives 2 through 5 - Navy Development - 2030 Operation
CalEEMod A2-5_Nav 2035 Ops	Alternatives 2 through 5 - Navy Development - 2035 Operation
CalEEMod A2-5_Nav 2050 Ops	Alternatives 2 through 5 - Navy Development - 2050 Operation
CalEEMod A2-5_Nav Tier 4 Operational Equip	Alternatives 2 through 5 - Navy Development - Tier 4 Operational Mobile Equipment
CalEEMod A2_Priv 2030 Ops	Alternative 2 - Private Development - 2030 Operation
CalEEMod A2_Priv 2035 Ops	Alternative 2 - Private Development - 2035 Operation
CalEEMod A2_Priv 2050 Ops & Const	Alternative 2 - Private Development - Construction and 2050 Operation
CalEEMod A3_Priv 2030 Ops	Alternative 3 - Private Development - 2030 Operation
CalEEMod A3_Priv 2035 Ops	Alternative 3 - Private Development - 2035 Operation
CalEEMod A3_Priv 2050 Ops & Const	Alternative 3 - Private Development - Construction and 2050 Operation
CalEEMod A4_Priv 2030 Ops	Alternative 4 - Private Development - 2030 Operation
CalEEMod A4_Priv 2035 Ops	Alternative 4 - Private Development - 2035 Operation
CalEEMod A4_Priv 2050 Ops & Const	Alternative 4 - Private Development - Construction and 2050 Operation
CalEEMod A4-5_TC_Abs 2035 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2035 Operation - Vehicle Trips Only - Absolute Trips
CalEEMod A4-5_TC_Abs 2050 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2050 Operation - Vehicle Trips Only - Absolute Trips
CalEEMod A4-5_TC_Inc 2035 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2035 Operation - Vehicle Trips Only - New Trips Relative to Existing (CEQA Only)
CalEEMod A4-5_TC_Inc 2050 Ops Vehicle Trips Only	Alternatives 4 and 5 - Transit Center - 2050 Operation - Vehicle Trips Only - New Trips Relative to Existing (CEQA Only)
CalEEMod A5_Priv 2030 Ops	Alternative 5 - Private Development - 2030 Operation
CalEEMod A5_Priv 2035 Ops	Alternative 5 - Private Development - 2035 Operation
CalEEMod A5_Priv 2050 Ops & Const	Alternative 5 - Private Development - Construction and 2050 Operation

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Attachment 3

Record of Non-Applicability

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Attachment 3.1

RONA Documentation

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RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY NAVY OLD TOWN CAMPUS REVITALIZATION

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

Introduction

The U.S. Environmental Protection Agency (USEPA) published *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*; Final Rule, in the 30 November 1993 Federal Register (FR) (40 Code of Federal Regulations [CFR] §§ 6, 51, and 93). On 5 April 2010, the USEPA finalized revisions to the General Conformity Rule (75 FR 17253–17279). The U.S. Department of the Navy (Navy) published Navy Guidance for Compliance with the Clean Air Act (CAA) General Conformity Rule (30 July 2013), as referenced in Chief of Naval Operations Instruction 5090.1E, Environmental Readiness Program Manual dated 3 Sept 2019 (Department of the Navy, 2019). These publications provide implementing guidance to document CAA conformity determination requirements. This RONA is provided to document compliance of the Proposed Action.

Federal regulations state that “no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity that does not conform to an applicable State Implementation Plan (SIP).” It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable SIP before the action is taken (40 CFR § 51.850[a]).

Federal actions may be exempt from conformity determinations if their emissions do not exceed designated *de minimis* levels for the criteria pollutants of nonattainment or maintenance in the areas of the federal action (40 CFR § 51.853[b]). The most stringent *de minimis* thresholds for the San Diego Air Basin (SDAB), which encompasses the region affected by the Proposed Action, are 50 tons per year of VOCs or NO_x, based on the current serious ozone nonattainment classification, as presented in Table 1.

In October 2020, the San Diego Air Pollution Control District (SDAPCD) Board approved the *Final 2020 Plan for Attaining the National Ozone Standards* (*2020 Ozone Plan*) (SDAPCD, 2020). In this plan, the SDAPCD requests that the USEPA re-designate the SDAB to severe nonattainment areas for both the 2008 and 2015 ozone national ambient air quality standards (NAAQS) to allow more time to bring the region into attainment of these standards. The California Air Resources Board (CARB) approved the *2020 Ozone Plan* on November 19, 2020 (CARB, 2020) and submitted it to the USEPA on January 8, 2021 for consideration as a revision to the California SIP for attaining the ozone standards. It is reasonably foreseeable that the USEPA will approve the *2020 Ozone Plan* within the 18-month period required by the Clean Air Act (review period began January 8, 2021). Therefore, the conformity applicability analysis of the Proposed Action relies on the conformity *de minimis* thresholds that pertains to a severe ozone nonattainment classification of 25 tons per year of VOCs or NO_x, as shown in Table 1. The project NEPA team obtained concurrence of this approach from Navy Legal on 4 March 2021.

Table 1. Applicable *de minimis* Levels of Nonattainment Criteria Pollutants for the SDAB

Pollutant	*Area Nonattainment Designation*	*De minimis Threshold (tpy)*
Ozone (VOC or NO_x)	Severe nonattainment	25
Ozone (VOC or NO_x)	Serious nonattainment	50

Source: 40 CFR § 93; Navy, 2013.
Legend: NO_x = nitrogen oxides; tpy = tons per year; VOC = volatile organic compounds.

Proposed Action

Action Proponent: Naval Information Warfare Systems Command

Location: Naval Base Point Loma Old Town Campus, California

Proposed Action Name: Navy Old Town Campus Revitalization

Proposed Action and Emissions Summary:

The Proposed Action would modernize the Naval Base Point Loma Old Town Campus (OTC) in San Diego, California, through demolition, construction, and renovation of buildings, utilities, and infrastructure to support the operational mission of Naval Information Warfare Systems Command (NAVWAR). The purpose and need for the Proposed Action could be achieved (1) through Navy redevelopment alone or (2) in collaboration with private developers to fund NAVWAR redevelopment on OTC through mixed-use redevelopment on other parts of the OTC property. Therefore, the conformity applicability analysis of the Proposed Action included evaluation of (1) Alternative 1 (NAVWAR-Only Redevelopment) and (2) Alternative 4 (Public-Private Redevelopment–NAVWAR and Higher Density Mixed Use with a Transit Center), as defined in the project Environmental Impact Statement (EIS).

The analysis evaluated the following construction timelines:

- For Alternatives 1 and 4, construction of the Navy development would occur from 2021 through 2025.
- For Alternative 4, construction of the private development (mixed-use, such as residential, office, retail, and hotel land uses) would occur from 2026 through 2049. Alternative 1 would not construct any private development.
- For Alternative 4, construction of a transit center to provide a direct connection to the regional mass transit network would occur from 2026 through 2034. Alternative 1 would not construct a transit center.

Full operation of OTC and the Navy facilities would begin in 2026 for both Alternatives 1 and 4. For Alternative 4, the analysis evaluated operation of private development according to the following sequence:

- For 2026, 0 percent occupancy and no operation.
- For 2030, operation at 25 percent occupancy.
- For 2035, operation at 45 percent occupancy.
- For 2050, operation at 100 percent occupancy.

Operation of Alternatives 1 and 4 would produce air emissions from the following sources:

- On-road vehicle traffic generated by the land uses. The analysis obtained vehicle trip rates and lengths developed in the EIS traffic study to assist in the estimation of vehicular emissions.

- Use of consumer products such as cleaning supplies, kitchen aerosols, cosmetics, toiletries, parking lot degreasers, fertilizers, and pesticides (VOC only).
- Architectural coating activities from periodic re-painting of buildings and parking lots (VOC only).
- Navy industrial equipment such as forklifts, onsite utility vehicles, and standby diesel generators.
- Landscaping equipment.
- Natural gas use in buildings.

The analysis also estimated emissions from operation of the No Action Alternative for the same analysis years as Alternatives 1 and 4. For all analysis years, the No Action Alternative would have the same land uses and number of vehicle trips as the existing conditions scenario for OTC (year 2020). The No Action Alternative served as the baseline for the evaluation of emissions from Alternatives 1 and 4. Therefore, the net changes in annual emissions that would result from a proposed alternative (i.e., proposed alternative minus the No Action Alternative) were compared to the emission *de minimis* thresholds to determine compliance of each alternative with the General Conformity Rule.

The air quality analysis used CalEEMod version 2016.3.2 to quantify air emissions from proposed construction and operations activities (California Air Pollution Control Officers Association, 2016). CalEEMod is a statewide program designed to calculate both construction and operational emissions from land use development projects in California. CalEEMod uses widely accepted emission calculation methods combined with default data that can be used if site-specific information is not available. The analysis of Alternative 4 combined overlapping construction and operational emissions to produce total annual emissions. As required by the General Conformity Rule, the analysis estimated annual emissions for the following scenarios for each proposed alternative:

- The attainment years specified in the SIP (*2020 Ozone Plan*) – 2026 and 2032
- Any year that the applicable SIP specifies an emissions budget – 2023, 2026, 2029, and 2032
- The year with the greatest annual project emissions
- The project horizon year – 2050

The conformity applicability analysis excluded certain indirect emissions evaluated in the EIS analysis, as the Navy determined that (1) these emissions would not be practicably controllable and (2) the Navy would not have continuing program responsibility over them. The indirect emissions excluded from the analysis would occur from the following sources:

- Construction emissions from (1) offsite worker commuter vehicle trips and (2) offsite truck trips, except outbound one-way trips for hauling debris or soil offsite.
- Operational emissions from private development.
- Construction and operational sources that would require an air permit.

Based on the analysis of Alternatives 1 and 4, the maximum estimated emissions of applicable pollutants would be below the conformity *de minimis* levels for the SDAB. Therefore, emissions from the Proposed Action would show conformity under the CAA. The estimated annual conformity emissions and applicable conformity *de minimis* levels for Alternatives 1 and 4 are shown in Tables 2 and 3, respectively. Attachment 3.1 to this RONA presents the supporting emission calculations for the conformity applicability analysis.

Table 2. Estimated Annual Air Pollutant Emissions of Alternative 1 within the SDAB (tons/year)

Year/Source Category	*VOC*	*NO_x*
Year 2023(1)	-	-
Alternative 1 Construction	**0.15**	**0.78**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2026(2)	-	-
Alternative 1 Operations	7.27	6.91
No Action Alternative	5.63	6.58
Alternative 1 Net Change(3)	**1.65**	**0.33**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2029	-	-
Alternative 1 Operations	7.12	6.25
No Action Alternative	5.49	5.82
Alternative 1 Net Change	**1.63**	**0.43**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2032	-	-
Alternative 1 Operations	7.00	5.89
No Action Alternative	5.38	5.43
Alternative 1 Net Change	**1.62**	**0.45**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2050	-	-
Alternative 1 Operations	6.69	5.46
No Action Alternative	5.10	5.03
Alternative 1 Net Change	**1.59**	**0.42**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Maximum Year(4)	-	-
Alternative 1 Construction	4.87	1.71
Alternative 1 Operations	--	--
Alternative 1 Total	--	--
No Action Alternative	--	--
Alternative 1 Net Change	**4.87**	**1.71**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**

Legend: -- = not applicable; - = no data; NO_x = nitrogen oxides; VOC = volatile organic compounds.

Notes: (1) Assumes no net change in operational emissions prior to 2026. Therefore, 2023 construction emissions were compared directly to the de minimis thresholds.

(2) Assumes no construction beyond 2025.

(3) Net change = Alternative 1 Total minus No Action Alternative.

(4) The maximum years would be 2025 for VOC and 2021 for NO_x, which only includes construction.

Table 3. Estimated Annual Air Pollutant Emissions of Alternative 4 within the SDAB (tons/year)

Year/Source Category	*VOC*	*NO_x*
Year 2023[1]	-	-
Alternative 4 Construction	**0.29**	**1.39**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2026	-	-
Alternative 4 Construction	0.40	2.93
Alternative 4 Operations	4.40	4.05
Alternative 4 Total	**4.80**	**6.98**
No Action Alternative	5.63	6.58
Alternative 4 Net Change[2]	**(0.83)**	**0.41**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2029	-	-
Alternative 4 Construction	2.57	2.70
Alternative 4 Operations	4.32	3.73
Alternative 4 Total	**6.89**	**6.44**
No Action Alternative	5.49	5.82
Alternative 4 Net Change	**1.40**	**0.62**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2032	-	-
Alternative 4 Construction	2.56	2.97
Alternative 4 Operations	4.25	3.55
Alternative 4 Total	**6.81**	**6.52**
No Action Alternative	5.38	5.43
Alternative 4 Net Change	**1.43**	**1.09**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Year 2050[3]	-	-
Alternative 4 Operations	**4.08**	**3.31**
No Action Alternative	5.10	5.03
Alternative 4 Net Change	**(1.02)**	**(1.72)**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**
Maximum Year[4]	-	-
Alternative 4 Construction	3.41	1.88
Alternative 4 Operations	--	--
Alternative 4 Total	--	--
No Action Alternative	--	--
Alternative 4 Net Change	**3.41**	**1.88**
***De Minimis* Thresholds**	**25**	**25**
Exceeds Threshold?	**No**	**No**

Legend: -- = not applicable; - = no data; NO_x = nitrogen oxides; VOC = volatile organic compounds.

Notes: (1) Assumes no net change in operational emissions prior to 2026. Therefore, 2023 construction emissions were compared directly to the de minimis thresholds.

(2) Net change = Alternative 4 Total minus No Action Alternative.

(3) Assumes there would be no construction in 2050.

(4) The maximum years would be 2025 for VOC and 2021 for NOx, which only includes construction.

<u>Affected Air Basin:</u> San Diego Air Basin

<u>Date RONA Prepared:</u> April 2021

<u>RONA Prepared by</u>: Leidos Corporation

Proposed Action Exemption(s)

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action at OTC are below all *de minimis* thresholds.

Attainment Area Status and Emissions Evaluation Conclusion

The Proposed Action would occur within the SDAB, which is the same geographic area as San Diego County. The USEPA currently classifies the SDAB as a serious nonattainment for the ozone NAAQS. The SDAB is in attainment of the NAAQS for all other criteria pollutants. Therefore, only project emissions of ozone (or its precursors, volatile organic compounds [VOCs] and oxides of nitrogen [NO_x]) were analyzed in reference for conformity rule applicability. The applicable *de minimis* threshold levels for this region are 50 tons of VOC and NO_x. However, it is reasonably foreseeable that the USEPA will re-designate the SDAB to severe ozone nonattainment by July 8, 2022. Therefore, the conformity applicability analysis of the Proposed Action relies on the conformity *de minimis* thresholds of 25 tons per year of VOCs or NO_x that pertain to a severe ozone nonattainment classification. The Navy concludes that the conformity *de minimis* levels for applicable criteria pollutants would not be exceeded as a result of implementing the Proposed Action. Therefore, the Proposed Action is exempt from a formal conformity determination. The Navy concludes that further formal conformity determination procedures are not required, resulting in this RONA.

RONA Approval

Signature: ____

Name/Rank: ____ Date: ______________________

Position: ____

This signature page will be signed when included in the Final EIS.

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Attachment 3.2

General Conformity Emissions Tables

List of Tables

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Table D-A3.2-1 Apportionment of Construction On-Road Vehicle Trips by Construction Site

Construction Site	*Land Area (acres)*	*On-Site One-Way Driving Distance (mi)* [2]	*Trip Apportionment, Alternative 1*	*Trip Apportionment, Alts. 2-5, Navy Devel.*	*Trip Apportionment, Alts. 2-5, Private Devel.* [3]
OTC Site 1	48.7	0.20	100%	0%	78%
OTC Site 2 Navy Development(1)	8.0	0.06	0%	100%	0%
OTC Site 2 Private Development(1)	13.8	0.10	0%	0%	22%
Total	**70.5**	--	**100%**	**100%**	**100%**

Legend: mi = miles; Alts. 2-5 = Alternatives 2 through 5; Devel. = Development.

Notes:

(1)Used for Alternatives 2 through 5 only.

(2)Assume the average on-site one-way driving distance is equal to one-half of the average distance across the site (measured in Google Earth).

(3)Trips were apportioned by private development site acreage.

Table D-A3.2-2 Construction On-Site Driving Distances for On-Road Vehicles

Vehicle Type	*Total One-Way Trip Length (mi) [(1)]*	*On-Site One-Way Driving Dist., Alt. 1 (mi) [(2)]*	*Pct. of Trip that is On-Site, Alt. 1*	*On-Site One-Way Driving Dist., Alts. 2-5, Navy Devel. (mi) [(2)]*	*Pct. of Trip that is On-Site, Alts. 2-5, Navy Devel.*	*On-Site One-Way Driving Dist., Alts. 2-5, Priv. Devel. (mi) [(2)]*	*Pct. of Trip that is On-Site, Alts. 2-5, Priv. Devel.*
Haul Trucks	20	0.20	1.0%	0.06	0.3%	0.18	0.9%
Vendor Trips	7.3	0.20	2.7%	0.06	0.9%	0.18	2.4%
Worker Trips	10.8	0.20	1.8%	0.06	0.6%	0.18	1.6%

Legend: mi = miles; Alt. 1 = Alternative 1; Alts. 2-5 = Alternatives 2 through 5; Priv. = Private; Devel. = Development; Pct. = Percent.

Notes: [(1)]CalEEMod default trip length.

[(2)]Average of the on-site one-way driving distances, weighted by the percent of trips by construction site.

Table D-A3.2-3 General Conformity Annual Construction Emissions by Source Category and Phase, Alternative 1

Source Category	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*
Fugitive Dust	Demolition	2021	0.000	0.000
Fugitive Dust	Site Preparation	2021	0.000	0.000
Fugitive Dust	Grading	2021	0.000	0.000
Off-Road Equipment	Demolition	2021	0.012	0.050
Off-Road Equipment	Site Preparation	2021	0.005	0.020
Off-Road Equipment	Grading	2021	0.017	0.074
Off-Road Equipment	Building Construction	2021	0.086	0.400
Off-Road Equipment	Building Construction	2022	0.146	0.700
Off-Road Equipment	Building Construction	2023	0.140	0.689
Off-Road Equipment	Building Construction	2024	0.136	0.684
Off-Road Equipment	Building Construction	2025	0.076	0.389
Off-Road Equipment	Paving	2025	0.008	0.033
Off-Road Equipment	Architectural Coating	2025	0.003	0.014
Paving Off-Gas	Paving	2025	0.043	0.000
Architectural Coating	Architectural Coating	2025	4.738	0.000
Haul Trucks[(1)]	Demolition	2021	0.005	0.160
Haul Trucks	Grading	2021	0.027	0.931
Vendor Trips[(2)]	Building Construction	2021	0.002	0.069
Vendor Trips	Building Construction	2022	0.003	0.116
Vendor Trips	Building Construction	2023	0.003	0.091
Vendor Trips	Building Construction	2024	0.003	0.091
Vendor Trips	Building Construction	2025	0.001	0.051
Worker Trips[(3)]	Demolition	2021	0.000	0.000
Worker Trips	Site Preparation	2021	0.000	0.000
Worker Trips	Grading	2021	0.000	0.000
Worker Trips	Building Construction	2021	0.003	0.002
Worker Trips	Building Construction	2022	0.005	0.004
Worker Trips	Building Construction	2023	0.005	0.003
Worker Trips	Building Construction	2024	0.005	0.003
Worker Trips	Building Construction	2025	0.003	0.002
Worker Trips	Paving	2025	0.000	0.000
Worker Trips	Architectural Coating	2025	0.000	0.000

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Notes: (1) Haul truck emissions include the on-site portion of the inbound trip and the entire portion of the outbound trip.

(2) Vendor trip emissions are onsite only.

(3) Worker trip emissions are onsite only.

Table D-A3.2-4 General Conformity Annual Construction Emissions by Source Category and Phase, Alternative 4, Navy Development

Source Category	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*
Fugitive Dust	Demolition	2021	0.000	0.000
Fugitive Dust	Site Preparation	2021	0.000	0.000
Fugitive Dust	Grading and Utilities	2021	0.000	0.000
Off-Road Equipment	Demolition	2021	0.005	0.020
Off-Road Equipment	Site Preparation	2021	0.002	0.010
Off-Road Equipment	Grading and Utilities	2021	0.009	0.037
Off-Road Equipment	Foundation Drilling	2021	0.008	0.035
Off-Road Equipment	Building Construction	2021	0.248	1.156
Off-Road Equipment	Building Construction	2022	0.292	1.401
Off-Road Equipment	Building Construction	2023	0.280	1.379
Off-Road Equipment	Building Construction	2024	0.272	1.368
Off-Road Equipment	Building Construction	2025	0.223	1.137
Off-Road Equipment	Paving	2025	0.003	0.012
Off-Road Equipment	Architectural Coating	2025	0.001	0.005
Paving Off-Gas	Paving	2025	0.002	0.000
Architectural Coating	Architectural Coating	2025	3.179	0.000
Haul Trucks[(1)]	Demolition	2021	0.004	0.122
Haul Trucks	Grading and Utilities	2021	0.014	0.491
Vendor Trips[(2)]	Foundation Drilling	2021	0.000	0.000
Vendor Trips	Building Construction	2021	0.000	0.005
Vendor Trips	Building Construction	2022	0.000	0.006
Vendor Trips	Building Construction	2023	0.000	0.005
Vendor Trips	Building Construction	2024	0.000	0.005
Vendor Trips	Building Construction	2025	0.000	0.004
Worker Trips[(3)]	Demolition	2021	0.000	0.000
Worker Trips	Site Preparation	2021	0.000	0.000
Worker Trips	Grading and Utilities	2021	0.000	0.000
Worker Trips	Foundation Drilling	2021	0.000	0.000
Worker Trips	Building Construction	2021	0.005	0.003
Worker Trips	Building Construction	2022	0.006	0.004
Worker Trips	Building Construction	2023	0.005	0.004
Worker Trips	Building Construction	2024	0.005	0.003
Worker Trips	Building Construction	2025	0.004	0.003
Worker Trips	Paving	2025	0.000	0.000
Worker Trips	Architectural Coating	2025	0.000	0.000

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Notes: [(1)] Haul truck emissions include the on-site portion of the inbound trip and the entire portion of the outbound trip.

[(2)] Vendor trip emissions are onsite only.

[(3)] Worker trip emissions are onsite only.

Table D-A3.2-5 General Conformity Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development

Source Category	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*
Fugitive Dust	Demolition	2026	0.000	0.000
Fugitive Dust	Site Preparation	2026	0.000	0.000
Fugitive Dust	Grading and Utilities	2026	0.000	0.000
Fugitive Dust	Grading and Utilities	2030	0.000	0.000
Fugitive Dust	Grading and Utilities	2035	0.000	0.000
Off-Road Equipment	Demolition	2026	0.016	0.070
Off-Road Equipment	Site Preparation	2026	0.009	0.040
Off-Road Equipment	Grading and Utilities	2026	0.018	0.076
Off-Road Equipment	Grading and Utilities	2030	0.014	0.060
Off-Road Equipment	Grading and Utilities	2035	0.038	0.166
Off-Road Equipment	Foundation Drilling	2026	0.031	0.133
Off-Road Equipment	Foundation Drilling	2027	0.012	0.052
Off-Road Equipment	Foundation Drilling	2030	0.034	0.148
Off-Road Equipment	Foundation Drilling	2035	0.053	0.230
Off-Road Equipment	Foundation Drilling	2036	0.041	0.177
Off-Road Equipment	Building Construction	2026	0.279	1.424
Off-Road Equipment	Building Construction	2027	0.592	3.022
Off-Road Equipment	Building Construction	2028	0.589	3.010
Off-Road Equipment	Building Construction	2029	0.506	2.582
Off-Road Equipment	Building Construction	2030	0.482	2.609
Off-Road Equipment	Building Construction	2031	0.526	2.849
Off-Road Equipment	Building Construction	2032	0.528	2.860
Off-Road Equipment	Building Construction	2033	0.524	2.838
Off-Road Equipment	Building Construction	2034	0.464	2.511
Off-Road Equipment	Building Construction	2035	0.389	2.142
Off-Road Equipment	Building Construction	2036	0.510	2.806
Off-Road Equipment	Building Construction	2037	0.508	2.795
Off-Road Equipment	Building Construction	2038	0.508	2.795
Off-Road Equipment	Building Construction	2039	0.506	2.784
Off-Road Equipment	Building Construction	2040	0.506	2.772
Off-Road Equipment	Building Construction	2041	0.506	2.772
Off-Road Equipment	Building Construction	2042	0.506	2.772
Off-Road Equipment	Building Construction	2043	0.506	2.772
Off-Road Equipment	Building Construction	2044	0.506	2.772
Off-Road Equipment	Building Construction	2045	0.504	2.761
Off-Road Equipment	Building Construction	2046	0.506	2.772
Off-Road Equipment	Building Construction	2047	0.506	2.772
Off-Road Equipment	Building Construction	2048	0.508	2.782
Off-Road Equipment	Building Construction	2049	0.347	1.901
Off-Road Equipment	Paving	2029	0.003	0.012
Off-Road Equipment	Paving	2034	0.002	0.009
Off-Road Equipment	Paving	2049	0.006	0.025
Off-Road Equipment	Architectural Coating	2029	0.003	0.011
Off-Road Equipment	Architectural Coating	2034	0.002	0.009
Off-Road Equipment	Architectural Coating	2049	0.005	0.024
Paving Off-Gas	Paving	2029	0.026	0.000
Paving Off-Gas	Paving	2034	0.026	0.000
Paving Off-Gas	Paving	2049	0.026	0.000
Architectural Coating	Architectural Coating	2028	2.018	0.000
Architectural Coating	Architectural Coating	2029	2.018	0.000
Architectural Coating	Architectural Coating	2030	2.018	0.000

Table D-A3.2-5 General Conformity Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development, Continued

Source Category	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*
Architectural Coating	Architectural Coating	2031	2.018	0.000
Architectural Coating	Architectural Coating	2032	2.018	0.000
Architectural Coating	Architectural Coating	2033	2.018	0.000
Architectural Coating	Architectural Coating	2034	2.018	0.000
Architectural Coating	Architectural Coating	2035	2.018	0.000
Architectural Coating	Architectural Coating	2036	2.018	0.000
Architectural Coating	Architectural Coating	2037	2.018	0.000
Architectural Coating	Architectural Coating	2038	2.018	0.000
Architectural Coating	Architectural Coating	2039	2.018	0.000
Architectural Coating	Architectural Coating	2040	2.018	0.000
Architectural Coating	Architectural Coating	2041	2.018	0.000
Architectural Coating	Architectural Coating	2042	2.018	0.000
Architectural Coating	Architectural Coating	2043	2.018	0.000
Architectural Coating	Architectural Coating	2044	2.018	0.000
Architectural Coating	Architectural Coating	2045	2.018	0.000
Architectural Coating	Architectural Coating	2046	2.018	0.000
Architectural Coating	Architectural Coating	2047	2.018	0.000
Architectural Coating	Architectural Coating	2048	2.018	0.000
Architectural Coating	Architectural Coating	2049	2.018	0.000
Haul Trucks[(1)]	Demolition	2026	0.018	0.578
Haul Trucks	Grading and Utilities	2026	0.018	0.551
Haul Trucks	Grading and Utilities	2030	0.013	0.406
Haul Trucks	Grading and Utilities	2035	0.036	1.053
Vendor Trips[(2)]	Foundation Drilling	2026	0.000	0.002
Vendor Trips	Foundation Drilling	2027	0.000	0.001
Vendor Trips	Foundation Drilling	2030	0.000	0.002
Vendor Trips	Foundation Drilling	2035	0.000	0.003
Vendor Trips	Foundation Drilling	2036	0.000	0.003
Vendor Trips	Building Construction	2026	0.001	0.053
Vendor Trips	Building Construction	2027	0.003	0.110
Vendor Trips	Building Construction	2028	0.003	0.108
Vendor Trips	Building Construction	2029	0.002	0.092
Vendor Trips	Building Construction	2030	0.003	0.097
Vendor Trips	Building Construction	2031	0.003	0.105
Vendor Trips	Building Construction	2032	0.003	0.105
Vendor Trips	Building Construction	2033	0.003	0.103
Vendor Trips	Building Construction	2034	0.002	0.091
Vendor Trips	Building Construction	2035	0.002	0.079
Vendor Trips	Building Construction	2036	0.003	0.103
Vendor Trips	Building Construction	2037	0.003	0.103
Vendor Trips	Building Construction	2038	0.003	0.103
Vendor Trips	Building Construction	2039	0.003	0.102
Vendor Trips	Building Construction	2040	0.003	0.101
Vendor Trips	Building Construction	2041	0.003	0.101
Vendor Trips	Building Construction	2042	0.003	0.101
Vendor Trips	Building Construction	2043	0.003	0.101
Vendor Trips	Building Construction	2044	0.003	0.101
Vendor Trips	Building Construction	2045	0.003	0.100
Vendor Trips	Building Construction	2046	0.003	0.100
Vendor Trips	Building Construction	2047	0.003	0.100
Vendor Trips	Building Construction	2048	0.003	0.101

Table D-A3.2-5 General Conformity Annual Construction Emissions by Source Category and Phase, Alternative 4, Private Development, Continued

Source Category	*Construction Phase*	*Year*	*VOC (ton/yr)*	*NO_x (ton/yr)*
Vendor Trips[2]	Building Construction	2049	0.002	0.069
Worker Trips[3]	Demolition	2026	0.000	0.000
Worker Trips	Site Preparation	2026	0.000	0.000
Worker Trips	Grading and Utilities	2026	0.000	0.000
Worker Trips	Grading and Utilities	2030	0.000	0.000
Worker Trips	Grading and Utilities	2035	0.000	0.000
Worker Trips	Foundation Drilling	2026	0.000	0.000
Worker Trips	Foundation Drilling	2027	0.000	0.000
Worker Trips	Foundation Drilling	2030	0.000	0.000
Worker Trips	Foundation Drilling	2035	0.000	0.000
Worker Trips	Foundation Drilling	2036	0.000	0.000
Worker Trips	Building Construction	2026	0.009	0.005
Worker Trips	Building Construction	2027	0.019	0.011
Worker Trips	Building Construction	2028	0.018	0.010
Worker Trips	Building Construction	2029	0.014	0.008
Worker Trips	Building Construction	2030	0.014	0.008
Worker Trips	Building Construction	2031	0.015	0.008
Worker Trips	Building Construction	2032	0.014	0.008
Worker Trips	Building Construction	2033	0.013	0.007
Worker Trips	Building Construction	2034	0.011	0.006
Worker Trips	Building Construction	2035	0.004	0.002
Worker Trips	Building Construction	2036	0.005	0.003
Worker Trips	Building Construction	2037	0.005	0.003
Worker Trips	Building Construction	2038	0.005	0.003
Worker Trips	Building Construction	2039	0.005	0.003
Worker Trips	Building Construction	2040	0.004	0.003
Worker Trips	Building Construction	2041	0.004	0.003
Worker Trips	Building Construction	2042	0.004	0.003
Worker Trips	Building Construction	2043	0.004	0.003
Worker Trips	Building Construction	2044	0.004	0.003
Worker Trips	Building Construction	2045	0.003	0.002
Worker Trips	Building Construction	2046	0.003	0.002
Worker Trips	Building Construction	2047	0.003	0.002
Worker Trips	Building Construction	2048	0.003	0.002
Worker Trips	Building Construction	2049	0.002	0.002
Worker Trips	Paving	2029	0.000	0.000
Worker Trips	Paving	2034	0.000	0.000
Worker Trips	Paving	2049	0.000	0.000
Worker Trips	Architectural Coating	2029	0.000	0.000
Worker Trips	Architectural Coating	2034	0.000	0.000
Worker Trips	Architectural Coating	2049	0.000	0.000

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Notes:
(1) Haul truck emissions include the on-site portion of the inbound trip and the entire portion of the outbound trip.
(2) Vendor trip emissions are onsite only.
(3) Worker trip emissions are onsite only.

Table D-A3.2-6 General Conformity Annual Construction Emissions by Year, Alternative 1

Year	*VOC (ton/yr)*	*NO_x (ton/yr)*
2021	0.16	1.71
2022	0.15	0.82
2023	0.15	0.78
2024	0.14	0.78
2025	4.87	0.49
2026	0.00	0.00
2027	0.00	0.00
2028	0.00	0.00
2029	0.00	0.00
2030	0.00	0.00
2031	0.00	0.00
2032	0.00	0.00
2033	0.00	0.00
2034	0.00	0.00
2035	0.00	0.00
2036	0.00	0.00
2037	0.00	0.00
2038	0.00	0.00
2039	0.00	0.00
2040	0.00	0.00
2041	0.00	0.00
2042	0.00	0.00
2043	0.00	0.00
2044	0.00	0.00
2045	0.00	0.00
2046	0.00	0.00
2047	0.00	0.00
2048	0.00	0.00
2049	0.00	0.00
2050	0.00	0.00
Maximum	**4.87**	**1.71**

Table D-A3.2-7 General Conformity Annual Construction Emissions by Year, Alternative 4

Year	*VOC (ton/yr)*	*NO_x (ton/yr)*
2021	0.29	1.88
2022	0.30	1.41
2023	0.29	1.39
2024	0.28	1.38
2025	3.41	1.16
2026	0.40	2.93
2027	0.63	3.20
2028	2.63	3.13
2029	2.57	2.70
2030	2.58	3.33
2031	2.56	2.96
2032	2.56	2.97
2033	2.56	2.95
2034	2.53	2.63
2035	2.54	3.67
2036	2.58	3.09
2037	2.53	2.90
2038	2.53	2.90
2039	2.53	2.89
2040	2.53	2.88
2041	2.53	2.88
2042	2.53	2.88
2043	2.53	2.88
2044	2.53	2.88
2045	2.53	2.86
2046	2.53	2.87
2047	2.53	2.87
2048	2.53	2.89
2049	2.41	2.02
2050	0.00	0.00
Maximum	**3.41**	**3.67**

Table D-A3.2-8 General Conformity Annual Operational Emissions by Source Category, No Action Alternative

Source Category	*VOC (ton/yr)*	*NO_x (ton/yr)*
Year 2026		
Vehicle Trips	1.10	4.55
Consumer Products	3.91	0.00
Architectural Coating	0.39	0.00
Operational Equipment[(1)]	0.12	1.14
Natural Gas Use	0.10	0.89
Total	**5.63**	**6.58**
Year 2030		
Vehicle Trips	0.92	3.99
Consumer Products	3.91	0.00
Architectural Coating	0.39	0.00
Operational Equipment[(1)]	0.12	0.69
Natural Gas Use	0.10	0.89
Total	**5.44**	**5.57**
Year 2035		
Vehicle Trips	0.77	3.68
Consumer Products	3.91	0.00
Architectural Coating	0.39	0.00
Operational Equipment[(1)]	0.12	0.66
Natural Gas Use	0.10	0.89
Total	**5.29**	**5.23**
Year 2050		
Vehicle Trips	0.58	3.49
Consumer Products	3.91	0.00
Architectural Coating	0.39	0.00
Operational Equipment[(1)]	0.12	0.66
Natural Gas Use	0.10	0.89
Total	**5.10**	**5.03**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [(1)]Permitted stationary equipment is excluded.

Table D-A3.2-9 General Conformity Annual Operational Emissions by Source Category, Alternative 1

Source Category	*VOC (ton/yr)*	*NO_x (ton/yr)*
Year 2026		
Vehicle Trips	1.22	5.04
Consumer Products	5.28	0.00
Architectural Coating	0.53	0.00
Landscaping	0.04	0.00
Operational Equipment[(1)]	0.08	0.69
Natural Gas Use	0.13	1.18
Total	**7.27**	**6.91**
Year 2030		
Vehicle Trips	1.02	4.41
Consumer Products	5.28	0.00
Architectural Coating	0.53	0.00
Landscaping	0.04	0.00
Operational Equipment[(1)]	0.08	0.43
Natural Gas Use	0.13	1.18
Total	**7.07**	**6.03**
Year 2035		
Vehicle Trips	0.85	4.08
Consumer Products	5.28	0.00
Architectural Coating	0.53	0.00
Landscaping	0.04	0.00
Operational Equipment[(1)]	0.08	0.42
Natural Gas Use	0.13	1.18
Total	**6.90**	**5.67**
Year 2050		
Vehicle Trips	0.64	3.86
Consumer Products	5.28	0.00
Architectural Coating	0.53	0.00
Landscaping	0.04	0.00
Operational Equipment[(1)]	0.08	0.42
Natural Gas Use	0.13	1.18
Total	**6.69**	**5.46**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [(1)]Permitted stationary equipment is excluded.

Table D-A3.2-10 General Conformity Annual Operational Emissions by Source Category, Alternative 4

Source Category [1]	*VOC (ton/yr)*	*NO_x (ton/yr)*
Year 2026		
Vehicle Trips	0.69	2.87
Consumer Products	3.25	0.00
Architectural Coating	0.32	0.00
Landscaping	0.01	0.00
Operational Equipment[2]	0.03	0.22
Natural Gas Use	0.11	0.96
Total	**4.40**	**4.05**
Year 2030		
Vehicle Trips	0.58	2.53
Consumer Products	3.25	0.00
Architectural Coating	0.32	0.00
Landscaping	0.01	0.00
Operational Equipment[2]	0.03	0.14
Natural Gas Use	0.11	0.96
Total	**4.29**	**3.63**
Year 2035		
Vehicle Trips	0.49	2.33
Consumer Products	3.25	0.00
Architectural Coating	0.32	0.00
Landscaping	0.01	0.00
Operational Equipment[2]	0.02	0.13
Natural Gas Use	0.11	0.96
Total	**4.19**	**3.43**
Year 2050		
Vehicle Trips	0.37	2.22
Consumer Products	3.25	0.00
Architectural Coating	0.32	0.00
Landscaping	0.01	0.00
Operational Equipment[2]	0.02	0.13
Natural Gas Use	0.11	0.96
Total	**4.08**	**3.31**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [1]Includes activities related to operation of Navy development only. Private development activities are excluded.
[2]Permitted stationary equipment is excluded.

Table D-A3.2-11 General Conformity Annual Operational Emissions Interpolated by Year, No Action Alternative

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*
2026	5.6	6.6
2027	5.6	6.3
2028	5.5	6.1
2029	5.5	5.8
2030	5.4	5.6
2031	5.4	5.5
2032	5.4	5.4
2033	5.4	5.4
2034	5.3	5.3
2035	5.3	5.2
2036	5.3	5.2
2037	5.3	5.2
2038	5.2	5.2
2039	5.2	5.2
2040	5.2	5.2
2041	5.2	5.2
2042	5.2	5.1
2043	5.2	5.1
2044	5.2	5.1
2045	5.2	5.1
2046	5.1	5.1
2047	5.1	5.1
2048	5.1	5.1
2049	5.1	5.0
2050	5.1	5.0
Maximum	**5.6**	**6.6**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [(1)]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly.

Table D-A3.2-12 General Conformity Annual Operational Emissions Interpolated by Year, Alternative 1

Year [1]	*VOC (ton/yr)*	*NO_x (ton/yr)*
2026	7.3	6.9
2027	7.2	6.7
2028	7.2	6.5
2029	7.1	6.2
2030	7.1	6.0
2031	7.0	6.0
2032	7.0	5.9
2033	7.0	5.8
2034	6.9	5.7
2035	6.9	5.7
2036	6.9	5.7
2037	6.9	5.6
2038	6.9	5.6
2039	6.8	5.6
2040	6.8	5.6
2041	6.8	5.6
2042	6.8	5.6
2043	6.8	5.6
2044	6.8	5.5
2045	6.8	5.5
2046	6.7	5.5
2047	6.7	5.5
2048	6.7	5.5
2049	6.7	5.5
2050	6.7	5.5
Maximum	**7.3**	**6.9**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [1]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly.

Table D-A3.2-13 General Conformity Annual Operational Emissions Interpolated by Year, Alternative 4

Year [(1)]	*VOC (ton/yr)*	*NO_x (ton/yr)*
2026	4.4	4.1
2027	4.4	3.9
2028	4.3	3.8
2029	4.3	3.7
2030	4.3	3.6
2031	4.3	3.6
2032	4.3	3.5
2033	4.2	3.5
2034	4.2	3.5
2035	4.2	3.4
2036	4.2	3.4
2037	4.2	3.4
2038	4.2	3.4
2039	4.2	3.4
2040	4.2	3.4
2041	4.1	3.4
2042	4.1	3.4
2043	4.1	3.4
2044	4.1	3.4
2045	4.1	3.4
2046	4.1	3.3
2047	4.1	3.3
2048	4.1	3.3
2049	4.1	3.3
2050	4.1	3.3
Maximum	**4.4**	**4.1**

Legend: VOC = volatile organic compounds; NO_x = nitrogen oxides; ton/yr = tons per year.

Note: [(1)]Operational emissions between analysis years 2026, 2030, 2035, and 2050 were interpolated linearly.

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Attachment 4

Construction HRA Supporting Calculations

(CEQA Only)

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Attachment 4.1

Construction DPM Emissions Tables

(CEQA Only)

List of Tables

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Table D-A4.1-1 Annual Construction DPM Emissions by Year, Alternative 4

Year	*Off-Road Equipment*	*Haul Trucks*	*Vendor Trips*
Navy Development	**(lb)**	**(lb)[1]**	**(lb)[1]**
2021	100.9	7.4	2.6
2022	105.8	0.0	2.6
2023	96.8	0.0	1.3
2024	89.4	0.0	1.3
2025	70.7	0.0	1.0
Private Development			
2026	106.9	8.3	5.2
2027	188.2	0.0	10.4
2028	184.4	0.0	10.0
2029	159.4	0.0	8.4
2030	129.6	3.0	9.0
2031	127.6	0.0	9.5
2032	128.0	0.0	9.3
2033	127.0	0.0	9.1
2034	113.5	0.0	8.0
2035	106.9	7.6	7.2
2036	119.1	0.0	9.2
2037	107.8	0.0	9.0
2038	107.8	0.0	9.0
2039	107.4	0.0	8.9
2040	101.8	0.0	8.7
2041	101.8	0.0	8.7
2042	101.8	0.0	8.7
2043	101.8	0.0	8.7
2044	101.8	0.0	8.7
2045	101.4	0.0	8.5
2046	101.8	0.0	8.6
2047	101.8	0.0	8.6
2048	102.2	0.0	8.6
2049	72.8	0.0	5.9
Total	**3,266.1**	**26.3**	**214.7**

Legend : lb = pounds.

Note : [1]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-2 Annual Construction DPM Emissions by Year, Alternative 5

Year	*Off-Road Equipment*	*Haul Trucks*	*Vendor Trips*
Navy Development	**(lb)**	**(lb)[1]**	**(lb)[1]**
2021	100.9	7.4	2.6
2022	105.8	0.0	2.6
2023	96.8	0.0	1.3
2024	89.4	0.0	1.3
2025	70.7	0.0	1.0
Private Development			
2026	87.5	7.7	4.2
2027	147.7	0.0	8.4
2028	143.4	0.0	8.1
2029	124.2	0.0	6.8
2030	104.0	2.6	7.3
2031	99.2	0.0	7.6
2032	99.6	0.0	7.5
2033	98.8	0.0	7.4
2034	88.4	0.0	6.5
2035	88.5	6.6	5.8
2036	96.3	0.0	7.5
2037	83.8	0.0	7.2
2038	83.8	0.0	7.2
2039	83.6	0.0	7.2
2040	79.2	0.0	7.0
2041	79.2	0.0	7.0
2042	79.2	0.0	7.0
2043	79.2	0.0	7.0
2044	79.2	0.0	7.0
2045	78.8	0.0	6.9
2046	79.2	0.0	6.9
2047	79.2	0.0	6.9
2048	79.6	0.0	6.9
2049	57.1	0.0	4.7
Total	**2,662.3**	**24.4**	**175.2**

Legend : lb = pounds.

Note : [1]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-3 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 4; Scenario A
Scenario A: Exposure Period Begins when Navy Development Construction Begins (2021)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr)* [(4)]	*Vendor Trip Emissions (lb/yr)* [(4)]
Navy Development						
Residential	3TM to Age 2	1-2[(1)]	2021-2022	103.35	3.70	2.62
Residential	Age 2 to Age 16	3-16	2023-2036[(2)]	18.35	0.00	0.25
Residential	Age 16 to Age 30	17-30	2037-2050[(2)]	0.00	0.00	0.00
Occupational	Age 16+	1-25	2021-2045[(2)]	18.54	0.30	0.35
Private Development						
Residential	3TM to Age 2	1-2	2021-2022[(3)]	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2023-2036[(3)]	106.47	1.35	6.81
Residential	Age 16 to Age 30	17-30	2037-2050[(3)]	93.71	0.00	7.90
Occupational	Age 16+	1-25	2021-2045[(3)]	96.96	0.76	6.97

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : [(1)]Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

[(2)]In the calculation of annual average emissions, Navy development construction emissions were set to zero starting in year 2026.

[(3)]In the calculation of annual average emissions, private development construction emissions were set to zero in years 2021-2025 and 2050.

[(4)]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-4 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 4; Scenario B
Scenario B: Exposure Period Begins when Private Development Construction Begins (2026)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr) (4)*	*Vendor Trip Emissions (lb/yr) (4)*
Navy Development						
Residential	3TM to Age 2	1-2(1)	2026-2027(2)	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2028-2041(2)	0.00	0.00	0.00
Residential	Age 16 to Age 30	17-30	2042-2055(2)	0.00	0.00	0.00
Occupational	Age 16+	1-25	2026-2050(2)	0.00	0.00	0.00
Private Development						
Residential	3TM to Age 2	1-2	2026-2027	147.53	4.14	7.76
Residential	Age 2 to Age 16	3-16	2028-2041	123.01	0.76	8.86
Residential	Age 16 to Age 30	17-30	2042-2055(3)	56.10	0.00	4.73
Occupational	Age 16+	1-25	2026-2050(3)	112.10	0.76	8.24

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : (1)Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

(2)Navy development construction emissions would be zero during this time period.

(3)In the calculation of annual average emissions, private development construction emissions were set to zero in years 2050-2055.

(4)This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-5 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 4; Scenario C
Scenario C: Exposure Period Begins in Year 2 of Private Development Construction (2027)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr) [(4)]*	*Vendor Trip Emissions (lb/yr) [(4)]*
Navy Development						
Residential	3TM to Age 2	1-2[(1)]	2027-2028[(2)]	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2029-2042[(2)]	0.00	0.00	0.00
Residential	Age 16 to Age 30	17-30	2043-2056[(2)]	0.00	0.00	0.00
Occupational	Age 16+	1-25	2027-2051[(2)]	0.00	0.00	0.00
Private Development						
Residential	3TM to Age 2	1-2	2027-2028	186.30	0.00	10.20
Residential	Age 2 to Age 16	3-16	2029-2042	117.11	0.76	8.77
Residential	Age 16 to Age 30	17-30	2043-2056[(3)]	48.83	0.00	4.11
Occupational	Age 16+	1-25	2027-2051[(3)]	107.83	0.42	8.03

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : [(1)]Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

[(2)]Navy development construction emissions would be zero during this time period.

[(3)]In the calculation of annual average emissions, private development construction emissions were set to zero in years 2050-2055.

[(4)]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-6 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 5; Scenario A
Scenario A: Exposure Period Begins when Navy Development Construction Begins (2021)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr) [(4)]*	*Vendor Trip Emissions (lb/yr) [(4)]*
Navy Development						
Residential	3TM to Age 2	1-2[(1)]	2021-2022	103.35	3.70	2.62
Residential	Age 2 to Age 16	3-16	2023-2036[(2)]	18.35	0.00	0.25
Residential	Age 16 to Age 30	17-30	2037-2050[(2)]	0.00	0.00	0.00
Occupational	Age 16+	1-25	2021-2045[(2)]	18.54	0.30	0.35
Private Development						
Residential	3TM to Age 2	1-2	2021-2022[(3)]	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2023-2036[(3)]	84.12	1.21	5.51
Residential	Age 16 to Age 30	17-30	2037-2050[(3)]	72.93	0.00	6.37
Occupational	Age 16+	1-25	2021-2045[(3)]	76.15	0.68	5.64

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : [(1)]Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

[(2)]In the calculation of annual average emissions, Navy development construction emissions were set to zero starting in year 2026.

[(3)]In the calculation of annual average emissions, private development construction emissions were set to zero in years 2021-2025 and 2050.

[(4)]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-7 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 5; Scenario B
Scenario B: Exposure Period Begins when Private Development Construction Begins (2026)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr)* [4]	*Vendor Trip Emissions (lb/yr)* [4]
Navy Development						
Residential	3TM to Age 2	1-2[1]	2026-2027[2]	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2028-2041[2]	0.00	0.00	0.00
Residential	Age 16 to Age 30	17-30	2042-2055[2]	0.00	0.00	0.00
Occupational	Age 16+	1-25	2026-2050[2]	0.00	0.00	0.00
Private Development						
Residential	3TM to Age 2	1-2	2026-2027	117.60	3.87	6.30
Residential	Age 2 to Age 16	3-16	2028-2041	96.58	0.66	7.17
Residential	Age 16 to Age 30	17-30	2042-2055[3]	43.68	0.00	3.82
Occupational	Age 16+	1-25	2026-2050[3]	87.95	0.68	6.66

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : [1]Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

[2]Navy development construction emissions would be zero during this time period.

[3]In the calculation of annual average emissions, private development construction emissions were set to zero in years 2050-2055.

[4]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-8 Annual Average Construction DPM Emissions by Receptor Exposure Period, Alternative 5; Scenario C
Scenario C: Exposure Period Begins in Year 2 of Private Development Construction (2027)

Receptor Exposure Type	*Receptor Age Range*	*Exposure Period Year Range*	*Calendar Year Range*	*Off-Road Equipment Emissions (lb/yr)*	*Haul Truck Emissions (lb/yr)* [(4)]	*Vendor Trip Emissions (lb/yr)* [(4)]
Navy Development						
Residential	3TM to Age 2	1-2[(1)]	2027-2028[(2)]	0.00	0.00	0.00
Residential	Age 2 to Age 16	3-16	2029-2042[(2)]	0.00	0.00	0.00
Residential	Age 16 to Age 30	17-30	2043-2056[(2)]	0.00	0.00	0.00
Occupational	Age 16+	1-25	2027-2051[(2)]	0.00	0.00	0.00
Private Development						
Residential	3TM to Age 2	1-2	2027-2028	145.57	0.00	8.25
Residential	Age 2 to Age 16	3-16	2029-2042	91.99	0.66	7.09
Residential	Age 16 to Age 30	17-30	2043-2056[(3)]	38.02	0.00	3.32
Occupational	Age 16+	1-25	2027-2051[(3)]	84.45	0.37	6.49

Legend : lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : [(1)]Annual average emissions from the first two years of the exposure period were assumed to occur for 2.25 years to cover the 3rd trimester and the first two years after birth.

[(2)]Navy development construction emissions would be zero during this time period.

[(3)]In the calculation of annual average emissions, private development construction emissions were set to zero in years 2050-2055.

[(4)]This table reports total on- and off-site haul truck and vendor trip emissions. The next table converts to on-site emissions for the HRA.

Table D-A4.1-9 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 4; Scenario A
Scenario A: Exposure Period Begins when Navy Development Construction Begins (2021)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	0.00	0.00	0.00	0.00
OTC2PRIV	61,350	0.10	0.00	0.00	0.00	0.00
OTC2NAVY	32,604	0.06	103.35	0.01	0.02	103.38
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	80.80	0.01	0.14	80.96
OTC2PRIV	61,350	0.10	25.66	0.00	0.02	25.69
OTC2NAVY	32,604	0.06	18.35	0.00	0.00	18.35
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	71.12	0.00	0.16	71.29
OTC2PRIV	61,350	0.10	22.59	0.00	0.03	22.62
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	73.59	0.01	0.14	73.74
OTC2PRIV	61,350	0.10	23.37	0.00	0.02	23.40
OTC2NAVY	32,604	0.06	18.54	0.00	0.00	18.55
Maximum Year of Emissions During Navy Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	0.00	0.00	0.00	0.00
OTC2PRIV	61,350	0.10	0.00	0.00	0.00	0.00
OTC2NAVY	32,604	0.06	105.80	0.02	0.02	105.85

Legend: m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes: (1)Source areas are from AERMOD.

(2)Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3)Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4)On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Table D-A4.1-10 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 4; Scenario B
Scenario B: Exposure Period Begins when Private Development Construction Begins (2026)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	111.97	0.03	0.16	112.16
OTC2PRIV	61,350	0.10	35.56	0.01	0.03	35.59
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	93.36	0.01	0.18	93.55
OTC2PRIV	61,350	0.10	29.65	0.00	0.03	29.68
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	42.58	0.00	0.10	42.68
OTC2PRIV	61,350	0.10	13.52	0.00	0.02	13.54
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	85.08	0.01	0.17	85.26
OTC2PRIV	61,350	0.10	27.02	0.00	0.03	27.05
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Maximum Year of Emissions During Private Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	142.84	0.06	0.21	143.11
OTC2PRIV	61,350	0.10	45.36	0.01	0.04	45.41
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00

Legend : m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : (1) Source areas are from AERMOD.

(2) Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3) Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4) On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Table D-A4.1-11 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 4; Scenario C
Scenario C: Exposure Period Begins in Year 2 of Private Development Construction (2027)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	141.39	0.00	0.21	141.60
OTC2PRIV	61,350	0.10	44.91	0.00	0.03	44.94
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	88.88	0.01	0.18	89.07
OTC2PRIV	61,350	0.10	28.23	0.00	0.03	28.26
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	37.06	0.00	0.09	37.14
OTC2PRIV	61,350	0.10	11.77	0.00	0.01	11.78
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	81.84	0.00	0.17	82.01
OTC2PRIV	61,350	0.10	25.99	0.00	0.03	26.02
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Maximum Year of Emissions During Private Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	142.84	0.06	0.21	143.11
OTC2PRIV	61,350	0.10	45.36	0.01	0.04	45.41
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00

Legend : m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : (1) Source areas are from AERMOD.

(2) Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3) Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4) On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Table D-A4.1-12 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 5; Scenario A
Scenario A: Exposure Period Begins when Navy Development Construction Begins (2021)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	0.00	0.00	0.00	0.00
OTC2PRIV	61,350	0.10	0.00	0.00	0.00	0.00
OTC2NAVY	32,604	0.06	103.35	0.01	0.02	103.38
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	63.84	0.01	0.11	63.97
OTC2PRIV	61,350	0.10	20.28	0.00	0.02	20.30
OTC2NAVY	32,604	0.06	18.35	0.00	0.00	18.35
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	55.35	0.00	0.13	55.49
OTC2PRIV	61,350	0.10	17.58	0.00	0.02	17.60
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	57.79	0.01	0.12	57.91
OTC2PRIV	61,350	0.10	18.35	0.00	0.02	18.37
OTC2NAVY	32,604	0.06	18.54	0.00	0.00	18.55
Maximum Year of Emissions During Navy Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	0.00	0.00	0.00	0.00
OTC2PRIV	61,350	0.10	0.00	0.00	0.00	0.00
OTC2NAVY	32,604	0.06	105.80	0.02	0.02	105.85

Legend: m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes: (1) Source areas are from AERMOD.

(2) Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3) Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4) On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Table D-A4.1-13 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 5; Scenario B
Scenario B: Exposure Period Begins when Private Development Construction Begins (2026)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	89.25	0.03	0.13	89.41
OTC2PRIV	61,350	0.10	28.35	0.00	0.02	28.37
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	73.30	0.00	0.15	73.45
OTC2PRIV	61,350	0.10	23.28	0.00	0.02	23.30
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	33.15	0.00	0.08	33.23
OTC2PRIV	61,350	0.10	10.53	0.00	0.01	10.54
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	66.75	0.01	0.14	66.89
OTC2PRIV	61,350	0.10	21.20	0.00	0.02	21.22
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Maximum Year of Emissions During Private Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	112.13	0.06	0.17	112.36
OTC2PRIV	61,350	0.10	35.61	0.01	0.03	35.65
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00

Legend : m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : (1) Source areas are from AERMOD.

(2) Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3) Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4) On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Table D-A4.1-14 Annual Average On-Site Construction DPM Emissions by AERMOD Source, Alternative 5; Scenario C
Scenario C: Exposure Period Begins in Year 2 of Private Development Construction (2027)

AERMOD Source	*Polygon Source Area (m^2) (1)*	*On-Site One-Way Truck Travel Distance (mi) (2)*	*Off-Road Equipment Emissions (lb/yr) (3)*	*Haul Truck Emissions (lb/yr) (3)(4)*	*Vendor Trip Emissions (lb/yr) (3)(4)*	*Total Annual Average Emissions (lb/yr)*
Residential Exposure, Age 3TM to Age 2 (Exposure Period Years 1-2)						
OTC1	193,165	0.20	110.48	0.00	0.17	110.65
OTC2PRIV	61,350	0.10	35.09	0.00	0.03	35.12
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 2 to Age 16 (Exposure Period Years 3-16)						
OTC1	193,165	0.20	69.82	0.00	0.15	69.97
OTC2PRIV	61,350	0.10	22.17	0.00	0.02	22.20
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Residential Exposure, Age 16 to Age 30 (Exposure Period Years 17-30)						
OTC1	193,165	0.20	28.86	0.00	0.07	28.92
OTC2PRIV	61,350	0.10	9.16	0.00	0.01	9.18
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Occupational Exposure, Age 16+ (Exposure Period Years 1-25)						
OTC1	193,165	0.20	64.09	0.00	0.13	64.23
OTC2PRIV	61,350	0.10	20.36	0.00	0.02	20.38
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00
Maximum Year of Emissions During Private Construction (for Chronic Hazard Index)						
OTC1	193,165	0.20	112.13	0.05	0.17	112.35
OTC2PRIV	61,350	0.10	35.61	0.01	0.03	35.65
OTC2NAVY	32,604	0.06	0.00	0.00	0.00	0.00

Legend : m^2 = square meters; mi = miles; lb/yr = pounds per year; 3TM = third trimester (before birth).

Notes : (1) Source areas are from AERMOD.

(2) Assume the average on-site one-way truck travel distance is equal to one-half of the average distance across the area source.

(3) Emissions from OTC1 and OTC2PRIV were apportioned from the private development emissions by relative surface area.

(4) On-site truck emissions were scaled from the total (on-site and off-site) truck emissions by the ratio of on-site to total one-way travel distance. Total one-way travel distances (from CalEEMod) were 20 miles for haul trucks and 7.3 miles for vendor trips.

Attachment 4.2

AERMOD Files

(CEQA Only)

Available in electronic format upon request

List of Files

Root Filename	*Description*
OTC_Construct_3yrs_UNIT	All Construction Sources - Unit Emission Rate - Residential, Worker, and Sensitive Receptors
OTC_Construct_Census_3yrs_UNIT	All Construction Sources - Unit Emission Rate - Census Block Centroid Receptors

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Attachment 4.3

HARP Files

(CEQA Only)

Available in electronic format upon request

List of Files

Root Filename	*Description*
a4_can_rs_yr1-2a	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario A - Alternative 4
a4_can_rs_yr1-2b	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario B - Alternative 4
a4_can_rs_yr1-2c	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario C - Alternative 4
a5_can_rs_yr1-2a	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario A - Alternative 5
a5_can_rs_yr1-2b	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario B - Alternative 5
a5_can_rs_yr1-2c	Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario C - Alternative 5
a4_can_rs_yr3-16a	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario A - Alternative 4
a4_can_rs_yr3-16b	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario B - Alternative 4
a4_can_rs_yr3-16c	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario C - Alternative 4
a5_can_rs_yr3-16a	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario A - Alternative 5
a5_can_rs_yr3-16b	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario B - Alternative 5
a5_can_rs_yr3-16c	Residential Cancer Risk - Age 2 to 16 - Exposure Scenario C - Alternative 5
a4_can_rs_yr17-30a	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario A - Alternative 4
a4_can_rs_yr17-30b	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario B - Alternative 4
a4_can_rs_yr17-30c	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario C - Alternative 4
a5_can_rs_yr17-30a	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario A - Alternative 5
a5_can_rs_yr17-30b	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario B - Alternative 5
a5_can_rs_yr17-30c	Residential Cancer Risk - Age 16 to 30 - Exposure Scenario C - Alternative 5
a4_can_wk_a	Worker Cancer Risk - Exposure Scenario A - Alternative 4
a4_can_wk_b	Worker Cancer Risk - Exposure Scenario B - Alternative 4
a4_can_wk_c	Worker Cancer Risk - Exposure Scenario C - Alternative 4
a5_can_wk_a	Worker Cancer Risk - Exposure Scenario A - Alternative 5
a5_can_wk_b	Worker Cancer Risk - Exposure Scenario B - Alternative 5
a5_can_wk_c	Worker Cancer Risk - Exposure Scenario C - Alternative 5
a4_chr_a	Chronic Hazard Index - Exposure Scenario A - Alternative 4
a4_chr_b	Chronic Hazard Index - Exposure Scenario B - Alternative 4
a4_chr_c	Chronic Hazard Index - Exposure Scenario C - Alternative 4
a5_chr_a	Chronic Hazard Index - Exposure Scenario A - Alternative 5
a5_chr_b	Chronic Hazard Index - Exposure Scenario B - Alternative 5
a5_chr_c	Chronic Hazard Index - Exposure Scenario C - Alternative 5
a4_can_cb_yr1-2a	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario A - Alternative 4
a4_can_cb_yr1-2b	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario B - Alternative 4
a4_can_cb_yr1-2c	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario C - Alternative 4
a5_can_cb_yr1-2a	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario A - Alternative 5
a5_can_cb_yr1-2b	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario B - Alternative 5
a5_can_cb_yr1-2c	Census Block Centroids - Residential Cancer Risk - Third Trimester to Age 2 - Exposure Scenario C - Alternative 5

Root Filename	Description
a4_can_cb_yr3-16a	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario A - Alternative 4
a4_can_cb_yr3-16b	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario B - Alternative 4
a4_can_cb_yr3-16c	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario C - Alternative 4
a5_can_cb_yr3-16a	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario A - Alternative 5
a5_can_cb_yr3-16b	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario B - Alternative 5
a5_can_cb_yr3-16c	Census Block Centroids - Residential Cancer Risk - Age 2 to 16 - Exposure Scenario C - Alternative 5
a4_can_cb_yr17-30a	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario A - Alternative 4
a4_can_cb_yr17-30b	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario B - Alternative 4
a4_can_cb_yr17-30c	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario C - Alternative 4
a5_can_cb_yr17-30a	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario A - Alternative 5
a5_can_cb_yr17-30b	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario B - Alternative 5
a5_can_cb_yr17-30c	Census Block Centroids - Residential Cancer Risk - Age 16 to 30 - Exposure Scenario C - Alternative 5

Attachment 4.4

HRA Results at Sensitive Receptors

(CEQA Only)

List of Tables

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Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
1	480600	3623274	Sensitive[(1)]	Dewey Child Development Center	1.45E-07	1.48E-07	1.18E-08	9.86E-08	1.58E-07	1.39E-07	7.05E-09	9.11E-08	1.99E-07	1.32E-07	6.13E-09	8.76E-08	3.05E-07	3.04E-07	3.38E-07	3.38E-07	1.18E-04
2	480692	3623201	Sensitive	Dewey Child Development Center	1.67E-07	1.73E-07	1.39E-08	1.15E-07	1.85E-07	1.64E-07	8.29E-09	1.07E-07	2.34E-07	1.56E-07	7.22E-09	1.03E-07	3.54E-07	3.57E-07	3.97E-07	3.97E-07	1.38E-04
3	481288	3624381	Sensitive	Early Learners Children's Academy	3.06E-07	4.28E-07	3.62E-08	2.84E-07	4.85E-07	4.28E-07	2.17E-08	2.80E-07	6.12E-07	4.08E-07	1.89E-08	2.69E-07	7.70E-07	9.35E-07	1.04E-06	1.04E-06	3.62E-04
4	481863	3623567	Sensitive	Harold J. Ballard Parent Center	5.23E-07	2.01E-06	1.87E-07	1.32E-06	2.50E-06	2.21E-06	1.12E-07	1.45E-06	3.16E-06	2.10E-06	9.74E-08	1.39E-06	2.72E-06	4.83E-06	5.36E-06	5.36E-06	1.87E-03
5	482254	3623227	Sensitive	Mission Valley YMCA-Old Town Academy	2.78E-07	1.04E-06	9.66E-08	6.84E-07	1.29E-06	1.14E-06	5.79E-08	7.47E-07	1.63E-06	1.09E-06	5.04E-08	7.19E-07	1.42E-06	2.49E-06	2.77E-06	2.77E-06	9.65E-04
6	480475	3622935	Sensitive	Saint Charles Borromeo Academy Preschool	8.92E-08	9.06E-08	7.22E-09	6.05E-08	9.67E-08	8.53E-08	4.32E-09	5.58E-08	1.22E-07	8.13E-08	3.76E-09	5.37E-08	1.87E-07	1.86E-07	2.07E-07	2.07E-07	7.21E-05
7	480238	3622960	Sensitive	Warren-Walker School Early Learning Center	5.80E-08	6.50E-08	5.29E-09	4.33E-08	7.09E-08	6.26E-08	3.17E-09	4.09E-08	8.95E-08	5.96E-08	2.76E-09	3.94E-08	1.28E-07	1.37E-07	1.52E-07	1.52E-07	5.29E-05
8	481376	3623196	Sensitive[(2)]	Best-Start Birth Center	4.43E-05	1.12E-05	2.78E-07	7.90E-06	3.72E-06	3.28E-06	1.66E-07	2.15E-06	4.70E-06	3.13E-06	1.45E-07	2.07E-06	7.90E-06	2.15E-06	2.07E-06	7.90E-06	2.65E-02
9	481389	3623215	Sensitive[(2)]	Best-Start Birth Center	3.53E-05	9.65E-06	2.96E-07	6.78E-06	3.96E-06	3.49E-06	1.77E-07	2.29E-06	5.00E-06	3.33E-06	1.54E-07	2.20E-06	6.78E-06	2.29E-06	2.20E-06	6.78E-06	2.11E-02
10	481134	3623973	Sensitive	San Diego County Psychiatric Hospital	4.27E-07	5.65E-07	4.74E-08	3.75E-07	6.35E-07	5.60E-07	2.84E-08	3.66E-07	8.01E-07	5.33E-07	2.47E-08	3.53E-07	1.04E-06	1.22E-06	1.36E-06	1.36E-06	4.73E-04
11	481167	3624018	Sensitive	San Diego County Psychiatric Hospital	4.49E-07	5.69E-07	4.74E-08	3.78E-07	6.34E-07	5.60E-07	2.84E-08	3.66E-07	8.01E-07	5.33E-07	2.47E-08	3.52E-07	1.06E-06	1.22E-06	1.36E-06	1.36E-06	4.73E-04
12	480600	3623274	Sensitive	Dewey Elementary	1.45E-07	1.48E-07	1.18E-08	9.86E-08	1.58E-07	1.39E-07	7.05E-09	9.11E-08	1.99E-07	1.32E-07	6.13E-09	8.76E-08	3.05E-07	3.04E-07	3.38E-07	3.38E-07	1.18E-04
13	480692	3623201	Sensitive	Dewey Elementary	1.67E-07	1.73E-07	1.39E-08	1.15E-07	1.85E-07	1.64E-07	8.29E-09	1.07E-07	2.34E-07	1.56E-07	7.22E-09	1.03E-07	3.54E-07	3.57E-07	3.97E-07	3.97E-07	1.38E-04
14	481745	3623663	Sensitive	iHigh Virtual Academy	8.04E-07	2.54E-06	2.34E-07	1.67E-06	3.13E-06	2.76E-06	1.40E-07	1.81E-06	3.95E-06	2.63E-06	1.22E-07	1.74E-06	3.58E-06	6.03E-06	6.70E-06	6.70E-06	2.33E-03
15	482254	3623227	Sensitive	Old Town Academy K-8 Charter	2.78E-07	1.04E-06	9.66E-08	6.84E-07	1.29E-06	1.14E-06	5.79E-08	7.47E-07	1.63E-06	1.09E-06	5.04E-08	7.19E-07	1.42E-06	2.49E-06	2.77E-06	2.77E-06	9.65E-04
16	480475	3622935	Sensitive	Saint Charles Borromeo Academy	8.92E-08	9.06E-08	7.22E-09	6.05E-08	9.67E-08	8.53E-08	4.32E-09	5.58E-08	1.22E-07	8.13E-08	3.76E-09	5.37E-08	1.87E-07	1.86E-07	2.07E-07	2.07E-07	7.21E-05
17	481958	3623064	Sensitive[(3)]	Veterans Village of San Diego	1.87E-06	8.02E-06	7.50E-07	5.27E-06	1.00E-05	8.87E-06	4.49E-07	5.80E-06	1.27E-05	8.44E-06	3.91E-07	5.58E-06	1.87E-06	1.00E-05	1.27E-05	1.27E-05	7.50E-03
18	481941	3623052	Sensitive[(3)]	Veterans Village of San Diego	2.06E-06	7.71E-06	7.16E-07	5.07E-06	9.58E-06	8.46E-06	4.28E-07	5.53E-06	1.21E-05	8.05E-06	3.73E-07	5.32E-06	2.06E-06	9.58E-06	1.21E-05	1.21E-05	7.15E-03
19	481926	3623036	Sensitive[(3)]	Veterans Village of San Diego	2.27E-06	6.71E-06	6.14E-07	4.42E-06	8.22E-06	7.26E-06	3.68E-07	4.75E-06	1.04E-05	6.91E-06	3.20E-07	4.57E-06	2.27E-06	8.22E-06	1.04E-05	1.04E-05	6.13E-03
20	481911	3623016	Sensitive[(3)]	Veterans Village of San Diego	2.48E-06	5.35E-06	4.78E-07	3.53E-06	6.39E-06	5.64E-06	2.86E-07	3.69E-06	8.07E-06	5.37E-06	2.49E-07	3.55E-06	2.48E-06	6.39E-06	8.07E-06	8.07E-06	4.77E-03
502	480975	3622950	Residential	25m grid	3.30E-07	3.01E-07	2.34E-08	2.01E-07	3.13E-07	2.76E-07	1.40E-08	1.81E-07	3.95E-07	2.63E-07	1.22E-08	1.74E-07	6.54E-07	6.04E-07	6.71E-07	6.71E-07	2.34E-04
553	480950	3622975	Residential	25m grid	3.21E-07	2.89E-07	2.23E-08	1.93E-07	2.99E-07	2.64E-07	1.34E-08	1.73E-07	3.77E-07	2.51E-07	1.16E-08	1.66E-07	6.32E-07	5.76E-07	6.40E-07	6.40E-07	2.23E-04
554	480975	3622975	Residential	25m grid	3.51E-07	3.16E-07	2.45E-08	2.12E-07	3.28E-07	2.89E-07	1.46E-08	1.89E-07	4.14E-07	2.75E-07	1.27E-08	1.82E-07	6.92E-07	6.31E-07	7.02E-07	7.02E-07	2.44E-04
606	480900	3623000	Residential	25m grid	2.82E-07	2.53E-07	1.96E-08	1.69E-07	2.62E-07	2.31E-07	1.17E-08	1.51E-07	3.31E-07	2.20E-07	1.02E-08	1.46E-07	5.55E-07	5.05E-07	5.61E-07	5.61E-07	1.95E-04
607	480925	3623000	Residential	25m grid	3.09E-07	2.76E-07	2.13E-08	1.85E-07	2.85E-07	2.52E-07	1.28E-08	1.65E-07	3.60E-07	2.40E-07	1.11E-08	1.58E-07	6.06E-07	5.50E-07	6.11E-07	6.11E-07	2.13E-04
608	480950	3623000	Residential	25m grid	3.39E-07	3.02E-07	2.33E-08	2.02E-07	3.12E-07	2.76E-07	1.40E-08	1.80E-07	3.94E-07	2.63E-07	1.22E-08	1.74E-07	6.64E-07	6.02E-07	6.69E-07	6.69E-07	2.33E-04
609	480975	3623000	Residential	25m grid	3.72E-07	3.32E-07	2.57E-08	2.22E-07	3.44E-07	3.03E-07	1.54E-08	1.98E-07	4.34E-07	2.89E-07	1.34E-08	1.91E-07	7.30E-07	6.62E-07	7.36E-07	7.36E-07	2.56E-04
662	480875	3623025	Residential	25m grid	2.67E-07	2.43E-07	1.88E-08	1.62E-07	2.52E-07	2.23E-07	1.13E-08	1.46E-07	3.18E-07	2.12E-07	9.81E-09	1.40E-07	5.29E-07	4.86E-07	5.40E-07	5.40E-07	1.88E-04
663	480900	3623025	Residential	25m grid	2.93E-07	2.64E-07	2.04E-08	1.76E-07	2.73E-07	2.41E-07	1.22E-08	1.58E-07	3.45E-07	2.30E-07	1.06E-08	1.52E-07	5.77E-07	5.27E-07	5.85E-07	5.85E-07	2.04E-04
664	480925	3623025	Residential	25m grid	3.22E-07	2.88E-07	2.23E-08	1.93E-07	2.98E-07	2.63E-07	1.33E-08	1.72E-07	3.76E-07	2.51E-07	1.16E-08	1.66E-07	6.32E-07	5.75E-07	6.39E-07	6.39E-07	2.22E-04
719	480850	3623050	Residential	25m grid	2.50E-07	2.33E-07	1.82E-08	1.56E-07	2.44E-07	2.15E-07	1.09E-08	1.41E-07	3.08E-07	2.05E-07	9.48E-09	1.35E-07	5.01E-07	4.70E-07	5.22E-07	5.22E-07	1.82E-04
720	480875	3623050	Residential	25m grid	2.74E-07	2.53E-07	1.97E-08	1.69E-07	2.63E-07	2.32E-07	1.18E-08	1.52E-07	3.32E-07	2.21E-07	1.02E-08	1.46E-07	5.47E-07	5.07E-07	5.64E-07	5.64E-07	1.96E-04
721	480900	3623050	Residential	25m grid	3.02E-07	2.75E-07	2.14E-08	1.84E-07	2.86E-07	2.52E-07	1.28E-08	1.65E-07	3.61E-07	2.40E-07	1.11E-08	1.59E-07	5.99E-07	5.51E-07	6.13E-07	6.13E-07	2.13E-04
777	480800	3623075	Residential	25m grid	2.12E-07	2.07E-07	1.64E-08	1.38E-07	2.19E-07	1.93E-07	9.80E-09	1.27E-07	2.77E-07	1.84E-07	8.53E-09	1.22E-07	4.36E-07	4.22E-07	4.69E-07	4.69E-07	1.63E-04
778	480825	3623075	Residential	25m grid	2.32E-07	2.24E-07	1.76E-08	1.49E-07	2.36E-07	2.08E-07	1.05E-08	1.36E-07	2.98E-07	1.98E-07	9.17E-09	1.31E-07	4.73E-07	4.54E-07	5.05E-07	5.05E-07	1.76E-04
779	480850	3623075	Residential	25m grid	2.54E-07	2.42E-07	1.90E-08	1.62E-07	2.55E-07	2.25E-07	1.14E-08	1.47E-07	3.21E-07	2.14E-07	9.90E-09	1.41E-07	5.15E-07	4.91E-07	5.45E-07	5.45E-07	1.90E-04
780	480875	3623075	Residential	25m grid	2.80E-07	2.63E-07	2.06E-08	1.76E-07	2.76E-07	2.43E-07	1.23E-08	1.59E-07	3.48E-07	2.32E-07	1.07E-08	1.53E-07	5.64E-07	5.32E-07	5.91E-07	5.91E-07	2.06E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
					Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
833	480775	3623100	Residential	25m grid	1.97E-07	1.98E-07	1.58E-08	1.32E-07	2.11E-07	1.86E-07	9.44E-09	1.22E-07	2.67E-07	1.77E-07	8.22E-09	1.17E-07	4.11E-07	4.07E-07	4.52E-07	4.52E-07	1.58E-04
834	480800	3623100	Residential	25m grid	2.14E-07	2.14E-07	1.70E-08	1.43E-07	2.28E-07	2.01E-07	1.02E-08	1.31E-07	2.87E-07	1.91E-07	8.85E-09	1.26E-07	4.45E-07	4.39E-07	4.87E-07	4.87E-07	1.70E-04
835	480825	3623100	Residential	25m grid	2.35E-07	2.32E-07	1.84E-08	1.55E-07	2.46E-07	2.17E-07	1.10E-08	1.42E-07	3.10E-07	2.07E-07	9.56E-09	1.37E-07	4.85E-07	4.74E-07	5.27E-07	5.27E-07	1.83E-04
886	480750	3623125	Residential	25m grid	1.84E-07	1.89E-07	1.51E-08	1.26E-07	2.03E-07	1.79E-07	9.06E-09	1.17E-07	2.56E-07	1.70E-07	7.89E-09	1.13E-07	3.88E-07	3.91E-07	4.34E-07	4.34E-07	1.51E-04
887	480775	3623125	Residential	25m grid	1.99E-07	2.04E-07	1.63E-08	1.36E-07	2.19E-07	1.93E-07	9.77E-09	1.26E-07	2.76E-07	1.84E-07	8.51E-09	1.21E-07	4.20E-07	4.21E-07	4.68E-07	4.68E-07	1.63E-04
888	480800	3623125	Residential	25m grid	2.17E-07	2.21E-07	1.77E-08	1.48E-07	2.36E-07	2.09E-07	1.06E-08	1.37E-07	2.98E-07	1.99E-07	9.20E-09	1.31E-07	4.56E-07	4.56E-07	5.06E-07	5.06E-07	1.76E-04
934	480725	3623150	Residential	25m grid	1.73E-07	1.80E-07	1.45E-08	1.20E-07	1.94E-07	1.71E-07	8.66E-09	1.12E-07	2.44E-07	1.63E-07	7.53E-09	1.08E-07	3.68E-07	3.73E-07	4.15E-07	4.15E-07	1.44E-04
982	482275	3623150	Residential	25m grid	3.96E-07	1.36E-06	1.25E-07	8.92E-07	1.68E-06	1.48E-06	7.50E-08	9.69E-07	2.12E-06	1.41E-06	6.53E-08	9.32E-07	1.88E-06	3.23E-06	3.59E-06	3.59E-06	1.25E-03
983	480725	3623175	Residential	25m grid	1.78E-07	1.85E-07	1.49E-08	1.24E-07	1.99E-07	1.76E-07	8.90E-09	1.15E-07	2.51E-07	1.67E-07	7.75E-09	1.11E-07	3.78E-07	3.84E-07	4.26E-07	4.26E-07	1.49E-04
1168	482250	3623250	Residential	25m grid	2.45E-07	9.30E-07	8.64E-08	6.11E-07	1.16E-06	1.02E-06	5.17E-08	6.68E-07	1.46E-06	9.73E-07	4.50E-08	6.43E-07	1.26E-06	2.23E-06	2.48E-06	2.48E-06	8.63E-04
1209	482175	3623275	Residential	25m grid	2.83E-07	1.18E-06	1.10E-07	7.73E-07	1.47E-06	1.30E-06	6.57E-08	8.49E-07	1.86E-06	1.23E-06	5.72E-08	8.16E-07	1.57E-06	2.83E-06	3.15E-06	3.15E-06	1.10E-03
1210	482200	3623275	Residential	25m grid	2.60E-07	1.05E-06	9.76E-08	6.88E-07	1.31E-06	1.15E-06	5.84E-08	7.55E-07	1.65E-06	1.10E-06	5.08E-08	7.26E-07	1.40E-06	2.52E-06	2.80E-06	2.80E-06	9.75E-04
1211	482225	3623275	Residential	25m grid	2.36E-07	9.27E-07	8.63E-08	6.10E-07	1.16E-06	1.02E-06	5.17E-08	6.68E-07	1.46E-06	9.71E-07	4.50E-08	6.42E-07	1.25E-06	2.23E-06	2.48E-06	2.48E-06	8.62E-04
1246	482125	3623300	Residential	25m grid	3.04E-07	1.36E-06	1.27E-07	8.91E-07	1.70E-06	1.50E-06	7.61E-08	9.83E-07	2.15E-06	1.43E-06	6.62E-08	9.45E-07	1.79E-06	3.28E-06	3.64E-06	3.64E-06	1.27E-03
1247	482150	3623300	Residential	25m grid	2.82E-07	1.22E-06	1.14E-07	8.01E-07	1.53E-06	1.35E-06	6.82E-08	8.81E-07	1.93E-06	1.28E-06	5.94E-08	8.47E-07	1.61E-06	2.94E-06	3.27E-06	3.27E-06	1.14E-03
1248	482175	3623300	Residential	25m grid	2.49E-07	1.04E-06	9.68E-08	6.82E-07	1.30E-06	1.14E-06	5.80E-08	7.49E-07	1.64E-06	1.09E-06	5.04E-08	7.20E-07	1.38E-06	2.50E-06	2.78E-06	2.78E-06	9.67E-04
1249	482200	3623300	Residential	25m grid	2.24E-07	9.07E-07	8.45E-08	5.96E-07	1.13E-06	9.99E-07	5.06E-08	6.54E-07	1.43E-06	9.51E-07	4.40E-08	6.29E-07	1.22E-06	2.18E-06	2.42E-06	2.42E-06	8.45E-04
1284	482100	3623325	Residential	25m grid	3.04E-07	1.41E-06	1.32E-07	9.25E-07	1.77E-06	1.56E-06	7.91E-08	1.02E-06	2.23E-06	1.49E-06	6.88E-08	9.83E-07	1.85E-06	3.41E-06	3.79E-06	3.79E-06	1.32E-03
1285	482125	3623325	Residential	25m grid	2.68E-07	1.19E-06	1.11E-07	7.81E-07	1.49E-06	1.32E-06	6.66E-08	8.61E-07	1.88E-06	1.25E-06	5.80E-08	8.28E-07	1.57E-06	2.87E-06	3.19E-06	3.19E-06	1.11E-03
1286	482150	3623325	Residential	25m grid	2.40E-07	1.03E-06	9.59E-08	6.74E-07	1.28E-06	1.13E-06	5.74E-08	7.42E-07	1.62E-06	1.08E-06	5.00E-08	7.14E-07	1.36E-06	2.48E-06	2.75E-06	2.75E-06	9.58E-04
1287	482175	3623325	Residential	25m grid	2.21E-07	9.15E-07	8.54E-08	6.01E-07	1.14E-06	1.01E-06	5.11E-08	6.61E-07	1.44E-06	9.61E-07	4.45E-08	6.35E-07	1.22E-06	2.20E-06	2.45E-06	2.45E-06	8.53E-04
1325	482100	3623350	Residential	25m grid	2.90E-07	1.32E-06	1.24E-07	8.69E-07	1.66E-06	1.47E-06	7.42E-08	9.59E-07	2.10E-06	1.40E-06	6.46E-08	9.23E-07	1.74E-06	3.20E-06	3.56E-06	3.56E-06	1.24E-03
1326	482125	3623350	Residential	25m grid	2.47E-07	1.08E-06	1.01E-07	7.08E-07	1.35E-06	1.19E-06	6.03E-08	7.80E-07	1.70E-06	1.13E-06	5.25E-08	7.50E-07	1.42E-06	2.60E-06	2.89E-06	2.89E-06	1.01E-03
1327	482150	3623350	Residential	25m grid	2.20E-07	9.31E-07	8.69E-08	6.12E-07	1.16E-06	1.03E-06	5.20E-08	6.72E-07	1.47E-06	9.78E-07	4.53E-08	6.47E-07	1.24E-06	2.24E-06	2.49E-06	2.49E-06	8.69E-04
1328	482175	3623350	Residential	25m grid	2.06E-07	8.41E-07	7.84E-08	5.53E-07	1.05E-06	9.27E-07	4.69E-08	6.06E-07	1.33E-06	8.82E-07	4.09E-08	5.83E-07	1.12E-06	2.02E-06	2.25E-06	2.25E-06	7.83E-04
1367	482075	3623375	Residential	25m grid	2.94E-07	1.36E-06	1.28E-07	8.94E-07	1.71E-06	1.51E-06	7.64E-08	9.87E-07	2.16E-06	1.44E-06	6.65E-08	9.50E-07	1.78E-06	3.29E-06	3.66E-06	3.66E-06	1.28E-03
1368	482100	3623375	Residential	25m grid	2.77E-07	1.23E-06	1.15E-07	8.10E-07	1.55E-06	1.36E-06	6.91E-08	8.93E-07	1.95E-06	1.30E-06	6.01E-08	8.59E-07	1.62E-06	2.98E-06	3.31E-06	3.31E-06	1.15E-03
1369	482125	3623375	Residential	25m grid	2.42E-07	1.03E-06	9.64E-08	6.78E-07	1.29E-06	1.14E-06	5.77E-08	7.46E-07	1.63E-06	1.09E-06	5.02E-08	7.17E-07	1.37E-06	2.49E-06	2.77E-06	2.77E-06	9.63E-04
1370	482150	3623375	Residential	25m grid	2.11E-07	8.70E-07	8.12E-08	5.72E-07	1.09E-06	9.59E-07	4.86E-08	6.28E-07	1.37E-06	9.13E-07	4.23E-08	6.04E-07	1.16E-06	2.09E-06	2.33E-06	2.33E-06	8.11E-04
1411	482075	3623400	Residential	25m grid	2.83E-07	1.27E-06	1.19E-07	8.32E-07	1.59E-06	1.40E-06	7.10E-08	9.18E-07	2.01E-06	1.33E-06	6.18E-08	8.83E-07	1.67E-06	3.06E-06	3.40E-06	3.40E-06	1.19E-03
1412	482100	3623400	Residential	25m grid	2.66E-07	1.15E-06	1.07E-07	7.54E-07	1.44E-06	1.27E-06	6.42E-08	8.29E-07	1.81E-06	1.21E-06	5.59E-08	7.98E-07	1.52E-06	2.77E-06	3.08E-06	3.08E-06	1.07E-03
1413	482125	3623400	Residential	25m grid	2.42E-07	1.00E-06	9.36E-08	6.59E-07	1.25E-06	1.11E-06	5.60E-08	7.24E-07	1.58E-06	1.05E-06	4.88E-08	6.97E-07	1.34E-06	2.42E-06	2.69E-06	2.69E-06	9.35E-04
1456	482075	3623425	Residential	25m grid	2.76E-07	1.19E-06	1.11E-07	7.79E-07	1.48E-06	1.31E-06	6.63E-08	8.57E-07	1.87E-06	1.25E-06	5.77E-08	8.24E-07	1.57E-06	2.86E-06	3.18E-06	3.18E-06	1.11E-03
1457	482100	3623425	Residential	25m grid	2.59E-07	1.07E-06	1.00E-07	7.04E-07	1.34E-06	1.18E-06	5.99E-08	7.73E-07	1.69E-06	1.13E-06	5.21E-08	7.44E-07	1.43E-06	2.58E-06	2.87E-06	2.87E-06	9.99E-04
1490	481825	3623450	Residential	25m grid	6.15E-07	3.75E-06	3.56E-07	2.46E-06	4.76E-06	4.20E-06	2.13E-07	2.75E-06	6.01E-06	4.00E-06	1.85E-07	2.65E-06	4.72E-06	9.18E-06	1.02E-05	1.02E-05	3.55E-03
1491	481850	3623450	Residential	25m grid	5.61E-07	3.29E-06	3.11E-07	2.16E-06	4.17E-06	3.68E-06	1.86E-07	2.41E-06	5.26E-06	3.50E-06	1.62E-07	2.32E-06	4.16E-06	8.04E-06	8.93E-06	8.93E-06	3.11E-03
1500	482075	3623450	Residential	25m grid	2.70E-07	1.11E-06	1.03E-07	7.29E-07	1.39E-06	1.22E-06	6.19E-08	8.00E-07	1.75E-06	1.16E-06	5.39E-08	7.69E-07	1.48E-06	2.67E-06	2.97E-06	2.97E-06	1.03E-03
1535	481850	3623475	Residential	25m grid	5.52E-07	2.98E-06	2.81E-07	1.95E-06	3.76E-06	3.32E-06	1.68E-07	2.17E-06	4.75E-06	3.16E-06	1.46E-07	2.09E-06	3.81E-06	7.25E-06	8.06E-06	8.06E-06	2.81E-03
1536	481875	3623475	Residential	25m grid	5.04E-07	2.63E-06	2.48E-07	1.73E-06	3.32E-06	2.93E-06	1.48E-07	1.91E-06	4.19E-06	2.79E-06	1.29E-07	1.84E-06	3.38E-06	6.39E-06	7.10E-06	7.10E-06	2.47E-03
1579	481850	3623500	Residential	25m grid	5.50E-07	2.73E-06	2.57E-07	1.79E-06	3.44E-06	3.04E-06	1.54E-07	1.99E-06	4.35E-06	2.89E-06	1.34E-07	1.91E-06	3.54E-06	6.64E-06	7.37E-06	7.37E-06	2.57E-03
1580	481875	3623500	Residential	25m grid	5.01E-07	2.41E-06	2.26E-07	1.58E-06	3.03E-06	2.68E-06	1.36E-07	1.75E-06	3.83E-06	2.55E-06	1.18E-07	1.68E-06	3.14E-06	5.84E-06	6.49E-06	6.49E-06	2.26E-03
1585	482000	3623500	Residential	25m grid	3.25E-07	1.32E-06	1.23E-07	8.69E-07	1.65E-06	1.46E-06	7.38E-08	9.54E-07	2.08E-06	1.39E-06	6.42E-08	9.17E-07	1.77E-06	3.18E-06	3.54E-06	3.54E-06	1.23E-03
1586	482025	3623500	Residential	25m grid	3.03E-07	1.19E-06	1.11E-07	7.83E-07	1.48E-06	1.31E-06	6.64E-08	8.57E-07	1.87E-06	1.25E-06	5.78E-08	8.25E-07	1.60E-06	2.86E-06	3.18E-06	3.18E-06	1.11E-03
1587	482050	3623500	Residential	25m grid	2.83E-07	1.08E-06	1.00E-07	7.09E-07	1.34E-06	1.18E-06	6.00E-08	7.75E-07	1.69E-06	1.13E-06	5.22E-08	7.46E-07	1.46E-06	2.59E-06	2.87E-06	2.87E-06	1.00E-03
1622	481825	3623525	Residential	25m grid	6.05E-07	2.83E-06	2.66E-07	1.86E-06	3.56E-06	3.14E-06	1.59E-07	2.06E-06	4.49E-06	2.99E-06	1.38E-07	1.98E-06	3.70E-06	6.86E-06	7.62E-06	7.62E-06	2.66E-03
1623	481850	3623525	Residential	25m grid	5.51E-07	2.51E-06	2.36E-07	1.65E-06	3.15E-06	2.78E-06	1.41E-07	1.82E-06	3.98E-06	2.65E-06	1.23E-07	1.75E-06	3.30E-06	6.08E-06	6.76E-06	6.76E-06	2.35E-03
1624	481875	3623525	Residential	25m grid	5.01E-07	2.22E-06	2.08E-07	1.46E-06	2.78E-06	2.46E-06	1.24E-07	1.61E-06	3.51E-06	2.34E-06	1.08E-07	1.55E-06	2.93E-06	5.37E-06	5.96E-06	5.96E-06	2.08E-03
1625	481900	3623525	Residential	25m grid	4.58E-07	1.97E-06	1.84E-07	1.29E-06	2.47E-06	2.18E-06	1.10E-07	1.42E-06	3.11E-06	2.07E-06	9.59E-08	1.37E-06	2.61E-06	4.75E-06	5.28E-06	5.28E-06	1.84E-03
1626	481925	3623525	Residential	25m grid	4.19E-07	1.75E-06	1.64E-07	1.15E-06	2.19E-06	1.94E-06	9.80E-08	1.27E-06	2.77E-06	1.84E-06	8.53E-08	1.22E-06	2.34E-06	4.23E-06	4.70E-06	4.70E-06	1.64E-03
1629	482000	3623525	Residential	25m grid	3.21E-07	1.22E-06	1.13E-07	8.02E-07	1.52E-06	1.34E-06	6.78E-08	8.76E-07	1.92E-06	1.28E-06	5.90E-08	8.43E-07	1.65E-06	2.92E-06	3.25E-06	3.25E-06	1.13E-03
1630	482025	3623525	Residential	25m grid	2.96E-07	1.09E-06	1.01E-07	7.17E-07	1.36E-06	1.20E-06	6.06E-08	7.83E-07	1.71E-06	1.14E-06	5.27E-08	7.53E-07	1.49E-06	2.61E-06	2.90E-06	2.90E-06	1.01E-03
1666	481825	3623550	Residential	25m grid	6.11E-07	2.61E-06	2.44E-07	1.72E-06	3.27E-06	2.88E-06	1.46E-07	1.89E-06	4.13E-06	2.75E-06	1.27E-07	1.82E-06	3.46E-06	6.30E-06	7.00E-06	7.00E-06	2.44E-03
1667	481850	3623550	Residential	25m grid	5.51E-07	2.29E-06	2.14E-07	1.51E-06	2.87E-06	2.53E-06	1.28E-07	1.66E-06	3.62E-06	2.41E-06	1.12E-07	1.59E-06	3.06E-06	5.52E-06	6.14E-06	6.14E-06	2.14E-03
1831	481200	3623650	Residential	25m grid	1.28E-06	1.86E-06	1.58E-07	1.23E-06	2.12E-06	1.87E-06	9.47E-08	1.22E-06	2.68E-06	1.78E-06	8.24E-08	1.18E-06	3.30E-06	4.08E-06	4.54E-06	4.54E-06	1.58E-03

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
1832	481225	3623650	Residential	25m grid	1.50E-06	1.97E-06	1.65E-07	1.31E-06	2.21E-06	1.95E-06	9.87E-08	1.27E-06	2.79E-06	1.85E-06	8.59E-08	1.23E-06	3.63E-06	4.25E-06	4.73E-06	4.73E-06	1.65E-03
1839	481625	3623650	Residential	25m grid	1.13E-06	4.65E-06	4.34E-07	3.06E-06	5.81E-06	5.13E-06	2.60E-07	3.36E-06	7.34E-06	4.88E-06	2.26E-07	3.23E-06	6.22E-06	1.12E-05	1.25E-05	1.25E-05	4.34E-03
1840	481650	3623650	Residential	25m grid	1.06E-06	4.04E-06	3.75E-07	2.65E-06	5.02E-06	4.43E-06	2.25E-07	2.90E-06	6.34E-06	4.22E-06	1.95E-07	2.79E-06	5.47E-06	9.68E-06	1.08E-05	1.08E-05	3.75E-03
1841	481675	3623650	Residential	25m grid	9.98E-07	3.67E-06	3.41E-07	2.41E-06	4.56E-06	4.03E-06	2.04E-07	2.63E-06	5.76E-06	3.83E-06	1.78E-07	2.53E-06	5.01E-06	8.79E-06	9.77E-06	9.77E-06	3.40E-03
1852	480550	3623675	Residential	25m grid	7.97E-08	1.32E-07	1.14E-08	8.71E-08	1.53E-07	1.35E-07	6.82E-09	8.82E-08	1.93E-07	1.28E-07	5.94E-09	8.48E-08	2.23E-07	2.94E-07	3.27E-07	3.27E-07	1.14E-04
1878	481200	3623675	Residential	25m grid	1.18E-06	1.71E-06	1.46E-07	1.14E-06	1.95E-06	1.72E-06	8.73E-08	1.13E-06	2.47E-06	1.64E-06	7.60E-08	1.08E-06	3.04E-06	3.76E-06	4.18E-06	4.18E-06	1.46E-03
1879	481225	3623675	Residential	25m grid	1.36E-06	1.85E-06	1.56E-07	1.23E-06	2.09E-06	1.85E-06	9.35E-08	1.21E-06	2.64E-06	1.76E-06	8.13E-08	1.16E-06	3.37E-06	4.03E-06	4.48E-06	4.48E-06	1.56E-03
1886	481625	3623675	Residential	25m grid	1.05E-06	3.97E-06	3.69E-07	2.61E-06	4.94E-06	4.36E-06	2.21E-07	2.85E-06	6.24E-06	4.15E-06	1.92E-07	2.74E-06	5.39E-06	9.52E-06	1.06E-05	1.06E-05	3.69E-03
1887	481650	3623675	Residential	25m grid	9.90E-07	3.47E-06	3.21E-07	2.28E-06	4.30E-06	3.80E-06	1.92E-07	2.48E-06	5.43E-06	3.61E-06	1.67E-07	2.39E-06	4.78E-06	8.29E-06	9.21E-06	9.21E-06	3.21E-03
1888	481675	3623675	Residential	25m grid	9.35E-07	3.10E-06	2.86E-07	2.04E-06	3.83E-06	3.38E-06	1.71E-07	2.21E-06	4.84E-06	3.22E-06	1.49E-07	2.13E-06	4.33E-06	7.39E-06	8.21E-06	8.21E-06	2.86E-03
1889	481700	3623675	Residential	25m grid	8.94E-07	2.90E-06	2.67E-07	1.91E-06	3.58E-06	3.16E-06	1.60E-07	2.07E-06	4.52E-06	3.01E-06	1.39E-07	1.99E-06	4.06E-06	6.90E-06	7.67E-06	7.67E-06	2.67E-03
1898	480525	3623700	Residential	25m grid	7.44E-08	1.22E-07	1.05E-08	8.05E-08	1.41E-07	1.24E-07	6.30E-09	8.14E-08	1.78E-07	1.18E-07	5.48E-09	7.83E-08	2.07E-07	2.72E-07	3.02E-07	3.02E-07	1.05E-04
1899	480550	3623700	Residential	25m grid	7.72E-08	1.27E-07	1.10E-08	8.42E-08	1.48E-07	1.30E-07	6.60E-09	8.52E-08	1.86E-07	1.24E-07	5.74E-09	8.20E-08	2.15E-07	2.84E-07	3.16E-07	3.16E-07	1.10E-04
1900	480575	3623700	Residential	25m grid	8.01E-08	1.33E-07	1.16E-08	8.82E-08	1.55E-07	1.37E-07	6.92E-09	8.94E-08	1.95E-07	1.30E-07	6.02E-09	8.60E-08	2.25E-07	2.98E-07	3.32E-07	3.32E-07	1.15E-04
1926	481225	3623700	Residential	25m grid	1.25E-06	1.77E-06	1.50E-07	1.17E-06	2.01E-06	1.77E-06	8.96E-08	1.16E-06	2.53E-06	1.68E-06	7.80E-08	1.11E-06	3.16E-06	3.86E-06	4.29E-06	4.29E-06	1.50E-03
1932	481600	3623700	Residential	25m grid	1.04E-06	3.96E-06	3.68E-07	2.60E-06	4.93E-06	4.35E-06	2.20E-07	2.85E-06	6.22E-06	4.14E-06	1.92E-07	2.74E-06	5.36E-06	9.50E-06	1.06E-05	1.06E-05	3.68E-03
1933	481625	3623700	Residential	25m grid	9.84E-07	3.44E-06	3.18E-07	2.26E-06	4.26E-06	3.76E-06	1.90E-07	2.46E-06	5.37E-06	3.58E-06	1.66E-07	2.36E-06	4.74E-06	8.20E-06	9.12E-06	9.12E-06	3.18E-03
1934	481650	3623700	Residential	25m grid	9.34E-07	3.04E-06	2.80E-07	2.00E-06	3.75E-06	3.31E-06	1.67E-07	2.16E-06	4.73E-06	3.15E-06	1.46E-07	2.08E-06	4.25E-06	7.22E-06	8.02E-06	8.02E-06	2.79E-03
1935	481675	3623700	Residential	25m grid	8.86E-07	2.73E-06	2.50E-07	1.80E-06	3.35E-06	2.96E-06	1.50E-07	1.94E-06	4.23E-06	2.82E-06	1.30E-07	1.86E-06	3.86E-06	6.46E-06	7.18E-06	7.18E-06	2.50E-03
1936	481700	3623700	Residential	25m grid	8.54E-07	2.57E-06	2.36E-07	1.69E-06	3.16E-06	2.79E-06	1.41E-07	1.83E-06	3.99E-06	2.66E-06	1.23E-07	1.76E-06	3.66E-06	6.09E-06	6.77E-06	6.77E-06	2.36E-03
1944	480550	3623725	Residential	25m grid	7.49E-08	1.23E-07	1.06E-08	8.12E-08	1.42E-07	1.25E-07	6.35E-09	8.21E-08	1.79E-07	1.19E-07	5.53E-09	7.90E-08	2.08E-07	2.74E-07	3.04E-07	3.04E-07	1.06E-04
1945	480575	3623725	Residential	25m grid	7.76E-08	1.28E-07	1.11E-08	8.49E-08	1.49E-07	1.31E-07	6.66E-09	8.60E-08	1.88E-07	1.25E-07	5.79E-09	8.27E-08	2.17E-07	2.87E-07	3.19E-07	3.19E-07	1.11E-04
1977	481575	3623725	Residential	25m grid	1.01E-06	3.93E-06	3.66E-07	2.59E-06	4.90E-06	4.33E-06	2.19E-07	2.83E-06	6.19E-06	4.12E-06	1.91E-07	2.72E-06	5.31E-06	9.45E-06	1.05E-05	1.05E-05	3.66E-03
1978	481600	3623725	Residential	25m grid	9.63E-07	3.40E-06	3.15E-07	2.24E-06	4.22E-06	3.72E-06	1.89E-07	2.44E-06	5.33E-06	3.55E-06	1.64E-07	2.34E-06	4.68E-06	8.13E-06	9.04E-06	9.04E-06	3.15E-03
1979	481625	3623725	Residential	25m grid	9.21E-07	2.99E-06	2.76E-07	1.97E-06	3.69E-06	3.26E-06	1.65E-07	2.13E-06	4.66E-06	3.10E-06	1.44E-07	2.05E-06	4.19E-06	7.12E-06	7.91E-06	7.91E-06	2.75E-03
1980	481650	3623725	Residential	25m grid	8.79E-07	2.67E-06	2.45E-07	1.76E-06	3.28E-06	2.89E-06	1.47E-07	1.89E-06	4.14E-06	2.75E-06	1.28E-07	1.82E-06	3.79E-06	6.32E-06	7.02E-06	7.02E-06	2.44E-03
1981	481675	3623725	Residential	25m grid	8.40E-07	2.42E-06	2.21E-07	1.59E-06	2.96E-06	2.61E-06	1.32E-07	1.71E-06	3.74E-06	2.49E-06	1.15E-07	1.64E-06	3.48E-06	5.70E-06	6.34E-06	6.34E-06	2.21E-03
1982	481700	3623725	Residential	25m grid	8.06E-07	2.23E-06	2.03E-07	1.47E-06	2.72E-06	2.40E-06	1.22E-07	1.57E-06	3.44E-06	2.29E-06	1.06E-07	1.51E-06	3.24E-06	5.25E-06	5.84E-06	5.84E-06	2.03E-03
1983	481725	3623725	Residential	25m grid	7.76E-07	2.12E-06	1.93E-07	1.40E-06	2.58E-06	2.28E-06	1.15E-07	1.49E-06	3.26E-06	2.17E-06	1.01E-07	1.43E-06	3.09E-06	4.98E-06	5.53E-06	5.53E-06	1.93E-03
2022	481575	3623750	Residential	25m grid	9.32E-07	3.36E-06	3.11E-07	2.21E-06	4.16E-06	3.67E-06	1.86E-07	2.40E-06	5.26E-06	3.50E-06	1.62E-07	2.31E-06	4.60E-06	8.02E-06	8.92E-06	8.92E-06	3.11E-03
2023	481600	3623750	Residential	25m grid	8.96E-07	2.94E-06	2.71E-07	1.94E-06	3.63E-06	3.21E-06	1.62E-07	2.10E-06	4.59E-06	3.05E-06	1.41E-07	2.02E-06	4.11E-06	7.00E-06	7.78E-06	7.78E-06	2.71E-03
2024	481625	3623750	Residential	25m grid	8.62E-07	2.62E-06	2.41E-07	1.73E-06	3.22E-06	2.85E-06	1.44E-07	1.86E-06	4.07E-06	2.71E-06	1.25E-07	1.79E-06	3.73E-06	6.21E-06	6.90E-06	6.90E-06	2.40E-03
2025	481650	3623750	Residential	25m grid	8.28E-07	2.37E-06	2.16E-07	1.56E-06	2.89E-06	2.55E-06	1.29E-07	1.67E-06	3.65E-06	2.43E-06	1.13E-07	1.61E-06	3.41E-06	5.58E-06	6.20E-06	6.20E-06	2.16E-03
2026	481675	3623750	Residential	25m grid	7.97E-07	2.16E-06	1.97E-07	1.43E-06	2.64E-06	2.33E-06	1.18E-07	1.52E-06	3.33E-06	2.21E-06	1.03E-07	1.46E-06	3.16E-06	5.08E-06	5.64E-06	5.64E-06	1.97E-03
2027	481700	3623750	Residential	25m grid	7.66E-07	2.00E-06	1.82E-07	1.32E-06	2.43E-06	2.15E-06	1.09E-07	1.41E-06	3.07E-06	2.04E-06	9.47E-08	1.35E-06	2.95E-06	4.69E-06	5.21E-06	5.21E-06	1.82E-03
2028	481725	3623750	Residential	25m grid	7.38E-07	1.90E-06	1.72E-07	1.25E-06	2.30E-06	2.03E-06	1.03E-07	1.33E-06	2.91E-06	1.93E-06	8.96E-08	1.28E-06	2.81E-06	4.44E-06	4.93E-06	4.93E-06	1.72E-03
2029	481750	3623750	Residential	25m grid	6.99E-07	1.74E-06	1.57E-07	1.15E-06	2.11E-06	1.86E-06	9.41E-08	1.22E-06	2.66E-06	1.77E-06	8.19E-08	1.17E-06	2.60E-06	4.06E-06	4.51E-06	4.51E-06	1.57E-03
2065	481575	3623775	Residential	25m grid	8.66E-07	2.88E-06	2.66E-07	1.90E-06	3.56E-06	3.14E-06	1.59E-07	2.06E-06	4.50E-06	2.99E-06	1.39E-07	1.98E-06	4.01E-06	6.86E-06	7.63E-06	7.63E-06	2.66E-03
2066	481600	3623775	Residential	25m grid	8.35E-07	2.56E-06	2.35E-07	1.69E-06	3.15E-06	2.78E-06	1.41E-07	1.82E-06	3.98E-06	2.65E-06	1.23E-07	1.75E-06	3.63E-06	6.07E-06	6.75E-06	6.75E-06	2.35E-03
2067	481625	3623775	Residential	25m grid	8.07E-07	2.31E-06	2.11E-07	1.52E-06	2.83E-06	2.50E-06	1.27E-07	1.64E-06	3.57E-06	2.38E-06	1.10E-07	1.57E-06	3.33E-06	5.46E-06	6.06E-06	6.06E-06	2.11E-03
2068	481650	3623775	Residential	25m grid	7.79E-07	2.11E-06	1.92E-07	1.39E-06	2.57E-06	2.27E-06	1.15E-07	1.49E-06	3.25E-06	2.16E-06	1.00E-07	1.43E-06	3.08E-06	4.96E-06	5.51E-06	5.51E-06	1.92E-03
2069	481675	3623775	Residential	25m grid	7.54E-07	1.95E-06	1.77E-07	1.28E-06	2.37E-06	2.09E-06	1.06E-07	1.37E-06	2.99E-06	1.99E-06	9.21E-08	1.31E-06	2.88E-06	4.56E-06	5.07E-06	5.07E-06	1.76E-03
2070	481700	3623775	Residential	25m grid	7.28E-07	1.81E-06	1.64E-07	1.19E-06	2.19E-06	1.93E-06	9.80E-08	1.27E-06	2.77E-06	1.84E-06	8.53E-08	1.22E-06	2.70E-06	4.22E-06	4.69E-06	4.69E-06	1.63E-03
2071	481725	3623775	Residential	25m grid	6.97E-07	1.68E-06	1.51E-07	1.11E-06	2.02E-06	1.79E-06	9.04E-08	1.17E-06	2.55E-06	1.70E-06	7.87E-08	1.12E-06	2.52E-06	3.90E-06	4.33E-06	4.33E-06	1.51E-03
2072	481750	3623775	Residential	25m grid	6.64E-07	1.55E-06	1.39E-07	1.02E-06	1.86E-06	1.64E-06	8.33E-08	1.08E-06	2.35E-06	1.57E-06	7.25E-08	1.04E-06	2.35E-06	3.59E-06	3.99E-06	3.99E-06	1.39E-03
2106	481575	3623800	Residential	25m grid	8.07E-07	2.50E-06	2.30E-07	1.65E-06	3.08E-06	2.72E-06	1.38E-07	1.78E-06	3.88E-06	2.59E-06	1.20E-07	1.71E-06	3.54E-06	5.93E-06	6.59E-06	6.59E-06	2.30E-03
2107	481600	3623800	Residential	25m grid	7.81E-07	2.26E-06	2.07E-07	1.49E-06	2.77E-06	2.45E-06	1.24E-07	1.60E-06	3.50E-06	2.33E-06	1.08E-07	1.54E-06	3.25E-06	5.34E-06	5.93E-06	5.93E-06	2.07E-03
2108	481625	3623800	Residential	25m grid	7.57E-07	2.07E-06	1.88E-07	1.36E-06	2.52E-06	2.23E-06	1.13E-07	1.46E-06	3.18E-06	2.12E-06	9.81E-08	1.40E-06	3.01E-06	4.86E-06	5.40E-06	5.40E-06	1.88E-03
2109	481650	3623800	Residential	25m grid	7.34E-07	1.91E-06	1.73E-07	1.26E-06	2.31E-06	2.04E-06	1.03E-07	1.34E-06	2.92E-06	1.95E-06	9.01E-08	1.29E-06	2.81E-06	4.46E-06	4.96E-06	4.96E-06	1.73E-03
2110	481675	3623800	Residential	25m grid	7.12E-07	1.77E-06	1.60E-07	1.17E-06	2.14E-06	1.89E-06	9.57E-08	1.24E-06	2.70E-06	1.80E-06	8.33E-08	1.19E-06	2.64E-06	4.13E-06	4.59E-06	4.59E-06	1.60E-03
2111	481700	3623800	Residential	25m grid	6.88E-07	1.65E-06	1.48E-07	1.09E-06	1.99E-06	1.75E-06	8.88E-08	1.15E-06	2.51E-06	1.67E-06	7.73E-08	1.10E-06	2.48E-06	3.83E-06	4.25E-06	4.25E-06	1.48E-03
2112	481725	3623800	Residential	25m grid	6.62E-07	1.53E-06	1.37E-07	1.01E-06	1.84E-06	1.62E-06	8.22E-08	1.06E-06	2.32E-06	1.55E-06	7.16E-08	1.02E-06	2.33E-06	3.54E-06	3.94E-06	3.94E-06	1.37E-03
2113	481750	3623800	Residential	25m grid	6.32E-07	1.42E-06	1.27E-07	9.35E-07	1.70E-06	1.50E-06	7.59E-08	9.81E-07	2.14E-06	1.43E-06	6.61E-08	9.44E-07	2.18E-06	3.27E-06	3.64E-06	3.64E-06	1.27E-03
2146	481550	3623825	Residential	25m grid	7.80E-07	2.42E-06	2.22E-07	1.59E-06	2.98E-06	2.63E-06	1.33E-07	1.72E-06	3.76E-06	2.50E-06	1.16E-07	1.65E-06	3.42E-06	5.74E-06	6.38E-06	6.38E-06	2.22E-03

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
2147	481575	3623825	Residential	25m grid	7.54E-07	2.20E-06	2.02E-07	1.45E-06	2.70E-06	2.38E-06	1.21E-07	1.56E-06	3.41E-06	2.27E-06	1.05E-07	1.50E-06	3.16E-06	5.20E-06	5.78E-06	5.78E-06	2.01E-03
2148	481600	3623825	Residential	25m grid	7.32E-07	2.03E-06	1.85E-07	1.34E-06	2.48E-06	2.18E-06	1.11E-07	1.43E-06	3.13E-06	2.08E-06	9.63E-08	1.38E-06	2.95E-06	4.77E-06	5.30E-06	5.30E-06	1.85E-03
2149	481625	3623825	Residential	25m grid	7.12E-07	1.88E-06	1.70E-07	1.24E-06	2.28E-06	2.01E-06	1.02E-07	1.32E-06	2.88E-06	1.92E-06	8.87E-08	1.27E-06	2.76E-06	4.40E-06	4.89E-06	4.89E-06	1.70E-03
2150	481650	3623825	Residential	25m grid	6.92E-07	1.74E-06	1.58E-07	1.15E-06	2.11E-06	1.86E-06	9.44E-08	1.22E-06	2.67E-06	1.77E-06	8.21E-08	1.17E-06	2.59E-06	4.07E-06	4.52E-06	4.52E-06	1.57E-03
2151	481675	3623825	Residential	25m grid	6.71E-07	1.62E-06	1.46E-07	1.07E-06	1.95E-06	1.72E-06	8.72E-08	1.13E-06	2.46E-06	1.64E-06	7.59E-08	1.08E-06	2.43E-06	3.76E-06	4.18E-06	4.18E-06	1.46E-03
2152	481700	3623825	Residential	25m grid	6.49E-07	1.50E-06	1.35E-07	9.92E-07	1.81E-06	1.60E-06	8.08E-08	1.04E-06	2.28E-06	1.52E-06	7.04E-08	1.00E-06	2.29E-06	3.49E-06	3.87E-06	3.87E-06	1.35E-03
2153	481725	3623825	Residential	25m grid	6.26E-07	1.40E-06	1.26E-07	9.26E-07	1.68E-06	1.49E-06	7.52E-08	9.72E-07	2.12E-06	1.41E-06	6.55E-08	9.35E-07	2.15E-06	3.24E-06	3.60E-06	3.60E-06	1.26E-03
2154	481750	3623825	Residential	25m grid	6.00E-07	1.30E-06	1.16E-07	8.60E-07	1.56E-06	1.37E-06	6.96E-08	8.99E-07	1.97E-06	1.31E-06	6.06E-08	8.65E-07	2.02E-06	3.00E-06	3.34E-06	3.34E-06	1.16E-03
2155	481775	3623825	Residential	25m grid	5.71E-07	1.20E-06	1.07E-07	7.94E-07	1.43E-06	1.27E-06	6.41E-08	8.28E-07	1.81E-06	1.21E-06	5.58E-08	7.97E-07	1.88E-06	2.76E-06	3.07E-06	3.07E-06	1.07E-03
2185	481500	3623850	Residential	25m grid	7.93E-07	2.59E-06	2.39E-07	1.71E-06	3.20E-06	2.83E-06	1.43E-07	1.85E-06	4.04E-06	2.69E-06	1.25E-07	1.78E-06	3.63E-06	6.17E-06	6.86E-06	6.86E-06	2.39E-03
2186	481525	3623850	Residential	25m grid	7.63E-07	2.35E-06	2.16E-07	1.55E-06	2.89E-06	2.55E-06	1.29E-07	1.67E-06	3.65E-06	2.43E-06	1.13E-07	1.61E-06	3.33E-06	5.58E-06	6.20E-06	6.20E-06	2.16E-03
2187	481550	3623850	Residential	25m grid	7.35E-07	2.16E-06	1.97E-07	1.42E-06	2.64E-06	2.33E-06	1.18E-07	1.53E-06	3.34E-06	2.22E-06	1.03E-07	1.47E-06	3.09E-06	5.10E-06	5.66E-06	5.66E-06	1.97E-03
2188	481575	3623850	Residential	25m grid	7.10E-07	1.99E-06	1.81E-07	1.31E-06	2.43E-06	2.14E-06	1.09E-07	1.40E-06	3.06E-06	2.04E-06	9.44E-08	1.35E-06	2.88E-06	4.68E-06	5.20E-06	5.20E-06	1.81E-03
2189	481600	3623850	Residential	25m grid	6.88E-07	1.84E-06	1.67E-07	1.21E-06	2.24E-06	1.98E-06	1.00E-07	1.29E-06	2.83E-06	1.88E-06	8.72E-08	1.25E-06	2.70E-06	4.32E-06	4.80E-06	4.80E-06	1.67E-03
2190	481625	3623850	Residential	25m grid	6.69E-07	1.71E-06	1.55E-07	1.13E-06	2.08E-06	1.83E-06	9.29E-08	1.20E-06	2.62E-06	1.75E-06	8.08E-08	1.15E-06	2.54E-06	4.00E-06	4.45E-06	4.45E-06	1.55E-03
2191	481650	3623850	Residential	25m grid	6.48E-07	1.59E-06	1.43E-07	1.05E-06	1.92E-06	1.69E-06	8.58E-08	1.11E-06	2.42E-06	1.61E-06	7.47E-08	1.07E-06	2.38E-06	3.70E-06	4.11E-06	4.11E-06	1.43E-03
2192	481675	3623850	Residential	25m grid	6.29E-07	1.48E-06	1.33E-07	9.77E-07	1.78E-06	1.57E-06	7.97E-08	1.03E-06	2.25E-06	1.50E-06	6.94E-08	9.91E-07	2.24E-06	3.44E-06	3.82E-06	3.82E-06	1.33E-03
2193	481700	3623850	Residential	25m grid	6.10E-07	1.38E-06	1.24E-07	9.11E-07	1.66E-06	1.46E-06	7.41E-08	9.57E-07	2.09E-06	1.39E-06	6.45E-08	9.21E-07	2.11E-06	3.19E-06	3.55E-06	3.55E-06	1.24E-03
2194	481725	3623850	Residential	25m grid	5.90E-07	1.29E-06	1.15E-07	8.52E-07	1.54E-06	1.36E-06	6.91E-08	8.92E-07	1.95E-06	1.30E-06	6.01E-08	8.58E-07	2.00E-06	2.98E-06	3.31E-06	3.31E-06	1.15E-03
2195	481750	3623850	Residential	25m grid	5.69E-07	1.21E-06	1.08E-07	7.98E-07	1.44E-06	1.27E-06	6.45E-08	8.33E-07	1.82E-06	1.21E-06	5.61E-08	8.02E-07	1.89E-06	2.78E-06	3.09E-06	3.09E-06	1.08E-03
2226	481475	3623875	Residential	25m grid	7.75E-07	2.48E-06	2.28E-07	1.63E-06	3.06E-06	2.70E-06	1.37E-07	1.77E-06	3.86E-06	2.57E-06	1.19E-07	1.70E-06	3.49E-06	5.89E-06	6.55E-06	6.55E-06	2.28E-03
2227	481500	3623875	Residential	25m grid	7.48E-07	2.28E-06	2.10E-07	1.50E-06	2.81E-06	2.48E-06	1.25E-07	1.62E-06	3.54E-06	2.36E-06	1.09E-07	1.56E-06	3.24E-06	5.41E-06	6.01E-06	6.01E-06	2.09E-03
2228	481525	3623875	Residential	25m grid	7.18E-07	2.10E-06	1.92E-07	1.38E-06	2.57E-06	2.27E-06	1.15E-07	1.48E-06	3.24E-06	2.16E-06	9.99E-08	1.43E-06	3.01E-06	4.95E-06	5.50E-06	5.50E-06	1.92E-03
2229	481550	3623875	Residential	25m grid	6.93E-07	1.95E-06	1.77E-07	1.28E-06	2.38E-06	2.10E-06	1.06E-07	1.37E-06	3.00E-06	2.00E-06	9.25E-08	1.32E-06	2.82E-06	4.58E-06	5.09E-06	5.09E-06	1.77E-03
2230	481575	3623875	Residential	25m grid	6.70E-07	1.81E-06	1.65E-07	1.20E-06	2.21E-06	1.95E-06	9.88E-08	1.28E-06	2.79E-06	1.86E-06	8.60E-08	1.23E-06	2.65E-06	4.26E-06	4.73E-06	4.73E-06	1.65E-03
2231	481600	3623875	Residential	25m grid	6.47E-07	1.68E-06	1.53E-07	1.11E-06	2.05E-06	1.80E-06	9.14E-08	1.18E-06	2.58E-06	1.72E-06	7.96E-08	1.14E-06	2.48E-06	3.94E-06	4.38E-06	4.38E-06	1.53E-03
2232	481625	3623875	Residential	25m grid	6.26E-07	1.56E-06	1.41E-07	1.03E-06	1.89E-06	1.67E-06	8.47E-08	1.09E-06	2.39E-06	1.59E-06	7.37E-08	1.05E-06	2.33E-06	3.65E-06	4.06E-06	4.06E-06	1.41E-03
2233	481650	3623875	Residential	25m grid	6.08E-07	1.46E-06	1.32E-07	9.65E-07	1.77E-06	1.56E-06	7.90E-08	1.02E-06	2.23E-06	1.48E-06	6.87E-08	9.81E-07	2.20E-06	3.40E-06	3.78E-06	3.78E-06	1.32E-03
2234	481675	3623875	Residential	25m grid	5.91E-07	1.37E-06	1.23E-07	9.03E-07	1.65E-06	1.45E-06	7.36E-08	9.51E-07	2.08E-06	1.38E-06	6.41E-08	9.15E-07	2.08E-06	3.17E-06	3.53E-06	3.53E-06	1.23E-03
2235	481700	3623875	Residential	25m grid	5.74E-07	1.28E-06	1.15E-07	8.47E-07	1.54E-06	1.36E-06	6.88E-08	8.88E-07	1.94E-06	1.29E-06	5.98E-08	8.55E-07	1.97E-06	2.96E-06	3.29E-06	3.29E-06	1.15E-03
2236	481725	3623875	Residential	25m grid	5.58E-07	1.21E-06	1.08E-07	7.96E-07	1.44E-06	1.27E-06	6.44E-08	8.32E-07	1.82E-06	1.21E-06	5.61E-08	8.01E-07	1.87E-06	2.78E-06	3.09E-06	3.09E-06	1.08E-03
2237	481750	3623875	Residential	25m grid	5.40E-07	1.13E-06	1.01E-07	7.47E-07	1.35E-06	1.19E-06	6.03E-08	7.79E-07	1.70E-06	1.13E-06	5.25E-08	7.49E-07	1.77E-06	2.60E-06	2.89E-06	2.89E-06	1.01E-03
2269	481500	3623900	Residential	25m grid	7.07E-07	2.05E-06	1.87E-07	1.35E-06	2.51E-06	2.21E-06	1.12E-07	1.45E-06	3.16E-06	2.11E-06	9.75E-08	1.39E-06	2.94E-06	4.83E-06	5.37E-06	5.37E-06	1.87E-03
2270	481525	3623900	Residential	25m grid	6.80E-07	1.90E-06	1.73E-07	1.25E-06	2.32E-06	2.05E-06	1.04E-07	1.34E-06	2.93E-06	1.95E-06	9.03E-08	1.29E-06	2.75E-06	4.47E-06	4.97E-06	4.97E-06	1.73E-03
2271	481550	3623900	Residential	25m grid	6.55E-07	1.78E-06	1.62E-07	1.17E-06	2.17E-06	1.91E-06	9.68E-08	1.25E-06	2.73E-06	1.82E-06	8.43E-08	1.20E-06	2.59E-06	4.17E-06	4.64E-06	4.64E-06	1.62E-03
2272	481575	3623900	Residential	25m grid	6.32E-07	1.66E-06	1.51E-07	1.10E-06	2.02E-06	1.78E-06	9.04E-08	1.17E-06	2.55E-06	1.70E-06	7.87E-08	1.12E-06	2.45E-06	3.90E-06	4.33E-06	4.33E-06	1.51E-03
2273	481600	3623900	Residential	25m grid	6.09E-07	1.55E-06	1.40E-07	1.02E-06	1.88E-06	1.66E-06	8.41E-08	1.09E-06	2.37E-06	1.58E-06	7.32E-08	1.05E-06	2.30E-06	3.63E-06	4.03E-06	4.03E-06	1.40E-03
2274	481625	3623900	Residential	25m grid	5.88E-07	1.45E-06	1.31E-07	9.54E-07	1.75E-06	1.54E-06	7.82E-08	1.01E-06	2.21E-06	1.47E-06	6.81E-08	9.72E-07	2.17E-06	3.37E-06	3.75E-06	3.75E-06	1.31E-03
2275	481650	3623900	Residential	25m grid	5.70E-07	1.36E-06	1.22E-07	8.94E-07	1.63E-06	1.44E-06	7.30E-08	9.44E-07	2.06E-06	1.37E-06	6.36E-08	9.08E-07	2.05E-06	3.15E-06	3.50E-06	3.50E-06	1.22E-03
2276	481675	3623900	Residential	25m grid	5.55E-07	1.27E-06	1.14E-07	8.40E-07	1.53E-06	1.35E-06	6.84E-08	8.83E-07	1.93E-06	1.29E-06	5.95E-08	8.50E-07	1.94E-06	2.95E-06	3.28E-06	3.28E-06	1.14E-03
2277	481700	3623900	Residential	25m grid	5.41E-07	1.20E-06	1.07E-07	7.90E-07	1.43E-06	1.27E-06	6.41E-08	8.29E-07	1.81E-06	1.21E-06	5.58E-08	7.97E-07	1.85E-06	2.77E-06	3.07E-06	3.07E-06	1.07E-03
2278	481725	3623900	Residential	25m grid	5.27E-07	1.13E-06	1.01E-07	7.46E-07	1.35E-06	1.19E-06	6.03E-08	7.79E-07	1.70E-06	1.13E-06	5.25E-08	7.50E-07	1.76E-06	2.60E-06	2.89E-06	2.89E-06	1.01E-03
2619	479300	3621700	Residential	100m grid	1.84E-08	2.08E-08	1.70E-09	1.38E-08	2.27E-08	2.00E-08	1.02E-09	1.31E-08	2.87E-08	1.91E-08	8.84E-10	1.26E-08	4.09E-08	4.38E-08	4.86E-08	4.86E-08	1.69E-05
2620	479400	3621700	Residential	100m grid	1.95E-08	2.16E-08	1.75E-09	1.44E-08	2.35E-08	2.07E-08	1.05E-09	1.35E-08	2.96E-08	1.97E-08	9.13E-10	1.30E-08	4.28E-08	4.52E-08	5.02E-08	5.02E-08	1.75E-05
2621	479500	3621700	Residential	100m grid	2.06E-08	2.23E-08	1.81E-09	1.49E-08	2.42E-08	2.14E-08	1.08E-09	1.40E-08	3.05E-08	2.03E-08	9.41E-10	1.34E-08	4.47E-08	4.66E-08	5.18E-08	5.18E-08	1.80E-05
2622	479600	3621700	Residential	100m grid	2.15E-08	2.31E-08	1.86E-09	1.54E-08	2.49E-08	2.20E-08	1.11E-09	1.44E-08	3.15E-08	2.09E-08	9.70E-10	1.38E-08	4.65E-08	4.80E-08	5.34E-08	5.34E-08	1.86E-05
2623	479700	3621700	Residential	100m grid	2.23E-08	2.39E-08	1.92E-09	1.59E-08	2.57E-08	2.27E-08	1.15E-09	1.49E-08	3.25E-08	2.16E-08	1.00E-09	1.43E-08	4.81E-08	4.96E-08	5.51E-08	5.51E-08	1.92E-05
2663	479300	3621800	Residential	100m grid	1.86E-08	2.15E-08	1.76E-09	1.43E-08	2.36E-08	2.09E-08	1.06E-09	1.36E-08	2.98E-08	1.99E-08	9.19E-10	1.31E-08	4.20E-08	4.55E-08	5.06E-08	5.06E-08	1.76E-05
2664	479400	3621800	Residential	100m grid	1.99E-08	2.25E-08	1.83E-09	1.50E-08	2.46E-08	2.17E-08	1.10E-09	1.42E-08	3.10E-08	2.06E-08	9.56E-10	1.36E-08	4.42E-08	4.74E-08	5.26E-08	5.26E-08	1.83E-05
2665	479500	3621800	Residential	100m grid	2.13E-08	2.34E-08	1.90E-09	1.56E-08	2.55E-08	2.25E-08	1.14E-09	1.47E-08	3.22E-08	2.14E-08	9.91E-10	1.42E-08	4.66E-08	4.91E-08	5.46E-08	5.46E-08	1.90E-05
2666	479600	3621800	Residential	100m grid	2.26E-08	2.43E-08	1.97E-09	1.62E-08	2.63E-08	2.32E-08	1.18E-09	1.52E-08	3.32E-08	2.21E-08	1.02E-09	1.46E-08	4.89E-08	5.07E-08	5.64E-08	5.64E-08	1.96E-05
2707	479300	3621900	Residential	100m grid	1.83E-08	2.21E-08	1.82E-09	1.47E-08	2.44E-08	2.15E-08	1.09E-09	1.41E-08	3.08E-08	2.05E-08	9.50E-10	1.36E-08	4.23E-08	4.71E-08	5.23E-08	5.23E-08	1.82E-05
2751	479300	3622000	Residential	100m grid	1.87E-08	2.24E-08	1.84E-09	1.49E-08	2.47E-08	2.18E-08	1.10E-09	1.43E-08	3.12E-08	2.08E-08	9.61E-10	1.37E-08	4.29E-08	4.76E-08	5.29E-08	5.29E-08	1.84E-05
2752	479400	3622000	Residential	100m grid	2.11E-08	2.42E-08	1.98E-09	1.61E-08	2.65E-08	2.34E-08	1.18E-09	1.53E-08	3.34E-08	2.22E-08	1.03E-09	1.47E-08	4.72E-08	5.10E-08	5.67E-08	5.67E-08	1.97E-05

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
2795	479300	3622100	Residential	100m grid	1.94E-08	2.17E-08	1.77E-09	1.45E-08	2.37E-08	2.09E-08	1.06E-09	1.37E-08	2.99E-08	1.99E-08	9.20E-10	1.31E-08	4.29E-08	4.56E-08	5.07E-08	5.07E-08	1.76E-05
2796	479400	3622100	Residential	100m grid	2.16E-08	2.47E-08	2.02E-09	1.64E-08	2.70E-08	2.38E-08	1.21E-09	1.56E-08	3.41E-08	2.27E-08	1.05E-09	1.50E-08	4.83E-08	5.20E-08	5.78E-08	5.78E-08	2.01E-05
2838	483600	3622100	Residential	100m grid	2.84E-07	3.40E-07	2.80E-08	2.26E-07	3.75E-07	3.31E-07	1.67E-08	2.16E-07	4.73E-07	3.15E-07	1.46E-08	2.08E-07	6.52E-07	7.22E-07	8.02E-07	8.02E-07	2.79E-04
2839	479300	3622200	Residential	100m grid	2.18E-08	2.28E-08	1.83E-09	1.52E-08	2.45E-08	2.16E-08	1.09E-09	1.41E-08	3.09E-08	2.06E-08	9.52E-10	1.36E-08	4.64E-08	4.71E-08	5.24E-08	5.24E-08	1.82E-05
2840	479400	3622200	Residential	100m grid	2.26E-08	2.42E-08	1.95E-09	1.61E-08	2.61E-08	2.30E-08	1.17E-09	1.51E-08	3.30E-08	2.19E-08	1.02E-09	1.45E-08	4.87E-08	5.03E-08	5.59E-08	5.59E-08	1.95E-05
2841	479500	3622200	Residential	100m grid	2.44E-08	2.69E-08	2.18E-09	1.79E-08	2.92E-08	2.58E-08	1.30E-09	1.69E-08	3.68E-08	2.45E-08	1.14E-09	1.62E-08	5.34E-08	5.62E-08	6.25E-08	6.25E-08	2.18E-05
2882	483600	3622200	Residential	100m grid	2.49E-07	3.11E-07	2.58E-08	2.07E-07	3.46E-07	3.05E-07	1.54E-08	2.00E-07	4.36E-07	2.90E-07	1.34E-08	1.92E-07	5.86E-07	6.66E-07	7.40E-07	7.40E-07	2.58E-04
2883	479300	3622300	Residential	100m grid	2.01E-08	2.09E-08	1.67E-09	1.39E-08	2.24E-08	1.97E-08	1.00E-09	1.29E-08	2.83E-08	1.88E-08	8.71E-10	1.24E-08	4.26E-08	4.31E-08	4.79E-08	4.79E-08	1.67E-05
2884	479400	3622300	Residential	100m grid	2.32E-08	2.39E-08	1.91E-09	1.60E-08	2.56E-08	2.26E-08	1.14E-09	1.48E-08	3.23E-08	2.15E-08	9.96E-10	1.42E-08	4.90E-08	4.93E-08	5.48E-08	5.48E-08	1.91E-05
2885	479500	3622300	Residential	100m grid	2.62E-08	2.73E-08	2.19E-09	1.82E-08	2.93E-08	2.59E-08	1.31E-09	1.69E-08	3.70E-08	2.46E-08	1.14E-09	1.63E-08	5.57E-08	5.65E-08	6.27E-08	6.27E-08	2.19E-05
2886	479600	3622300	Residential	100m grid	2.78E-08	2.95E-08	2.38E-09	1.97E-08	3.18E-08	2.81E-08	1.42E-09	1.84E-08	4.02E-08	2.67E-08	1.24E-09	1.77E-08	5.97E-08	6.13E-08	6.81E-08	6.81E-08	2.37E-05
2925	483500	3622300	Residential	100m grid	2.67E-07	3.44E-07	2.87E-08	2.28E-07	3.84E-07	3.39E-07	1.72E-08	2.22E-07	4.85E-07	3.23E-07	1.49E-08	2.13E-07	6.40E-07	7.40E-07	8.23E-07	8.23E-07	2.87E-04
2926	483600	3622300	Residential	100m grid	2.34E-07	3.10E-07	2.60E-08	2.06E-07	3.49E-07	3.08E-07	1.56E-08	2.01E-07	4.40E-07	2.93E-07	1.36E-08	1.94E-07	5.71E-07	6.72E-07	7.47E-07	7.47E-07	2.60E-04
2927	479300	3622400	Residential	100m grid	2.01E-08	2.24E-08	1.82E-09	1.49E-08	2.43E-08	2.15E-08	1.09E-09	1.41E-08	3.07E-08	2.05E-08	9.47E-10	1.35E-08	4.43E-08	4.69E-08	5.21E-08	5.21E-08	1.82E-05
2928	479400	3622400	Residential	100m grid	2.26E-08	2.41E-08	1.95E-09	1.61E-08	2.61E-08	2.30E-08	1.16E-09	1.50E-08	3.29E-08	2.19E-08	1.01E-09	1.45E-08	4.87E-08	5.02E-08	5.58E-08	5.58E-08	1.94E-05
2929	479500	3622400	Residential	100m grid	2.58E-08	2.68E-08	2.15E-09	1.79E-08	2.88E-08	2.54E-08	1.29E-09	1.66E-08	3.64E-08	2.42E-08	1.12E-09	1.60E-08	5.48E-08	5.55E-08	6.17E-08	6.17E-08	2.15E-05
2930	479600	3622400	Residential	100m grid	2.90E-08	2.99E-08	2.39E-09	1.99E-08	3.20E-08	2.82E-08	1.43E-09	1.85E-08	4.04E-08	2.69E-08	1.24E-09	1.78E-08	6.12E-08	6.17E-08	6.85E-08	6.85E-08	2.39E-05
2968	483400	3622400	Residential	100m grid	3.19E-07	4.30E-07	3.62E-08	2.86E-07	4.85E-07	4.28E-07	2.17E-08	2.80E-07	6.12E-07	4.07E-07	1.89E-08	2.69E-07	7.85E-07	9.35E-07	1.04E-06	1.04E-06	3.62E-04
2969	483500	3622400	Residential	100m grid	2.34E-07	3.28E-07	2.78E-08	2.18E-07	3.72E-07	3.28E-07	1.66E-08	2.15E-07	4.70E-07	3.13E-07	1.45E-08	2.07E-07	5.90E-07	7.17E-07	7.97E-07	7.97E-07	2.78E-04
2970	483600	3622400	Residential	100m grid	2.02E-07	2.94E-07	2.51E-08	1.95E-07	3.36E-07	2.96E-07	1.50E-08	1.94E-07	4.24E-07	2.82E-07	1.31E-08	1.86E-07	5.21E-07	6.47E-07	7.19E-07	7.19E-07	2.50E-04
2971	479300	3622500	Residential	100m grid	1.61E-08	2.06E-08	1.72E-09	1.37E-08	2.30E-08	2.03E-08	1.03E-09	1.33E-08	2.90E-08	1.93E-08	8.94E-10	1.28E-08	3.84E-08	4.43E-08	4.92E-08	4.92E-08	1.71E-05
2972	479400	3622500	Residential	100m grid	1.91E-08	2.29E-08	1.88E-09	1.52E-08	2.52E-08	2.23E-08	1.13E-09	1.46E-08	3.18E-08	2.12E-08	9.81E-10	1.40E-08	4.39E-08	4.86E-08	5.40E-08	5.40E-08	1.88E-05
2973	479500	3622500	Residential	100m grid	2.38E-08	2.67E-08	2.17E-09	1.78E-08	2.91E-08	2.57E-08	1.30E-09	1.68E-08	3.67E-08	2.45E-08	1.13E-09	1.62E-08	5.27E-08	5.61E-08	6.23E-08	6.23E-08	2.17E-05
2974	479600	3622500	Residential	100m grid	2.84E-08	3.07E-08	2.48E-09	2.04E-08	3.32E-08	2.93E-08	1.48E-09	1.91E-08	4.19E-08	2.79E-08	1.29E-09	1.84E-08	6.15E-08	6.39E-08	7.10E-08	7.10E-08	2.47E-05
2975	479700	3622500	Residential	100m grid	3.16E-08	3.30E-08	2.65E-09	2.20E-08	3.55E-08	3.13E-08	1.58E-09	2.05E-08	4.48E-08	2.98E-08	1.38E-09	1.97E-08	6.73E-08	6.83E-08	7.59E-08	7.59E-08	2.64E-05
3009	483100	3622500	Residential	100m grid	4.67E-07	6.35E-07	5.35E-08	4.21E-07	7.16E-07	6.32E-07	3.20E-08	4.14E-07	9.04E-07	6.02E-07	2.79E-08	3.98E-07	1.15E-06	1.38E-06	1.53E-06	1.53E-06	5.34E-04
3012	483400	3622500	Residential	100m grid	2.63E-07	3.99E-07	3.42E-08	2.64E-07	4.57E-07	4.04E-07	2.04E-08	2.64E-07	5.77E-07	3.84E-07	1.78E-08	2.54E-07	6.95E-07	8.81E-07	9.80E-07	9.80E-07	3.41E-04
3013	483500	3622500	Residential	100m grid	2.08E-07	3.31E-07	2.85E-08	2.19E-07	3.82E-07	3.37E-07	1.71E-08	2.21E-07	4.82E-07	3.21E-07	1.49E-08	2.12E-07	5.67E-07	7.36E-07	8.18E-07	8.18E-07	2.85E-04
3014	483600	3622500	Residential	100m grid	1.71E-07	2.86E-07	2.48E-08	1.89E-07	3.32E-07	2.93E-07	1.48E-08	1.92E-07	4.19E-07	2.79E-07	1.29E-08	1.84E-07	4.82E-07	6.40E-07	7.11E-07	7.11E-07	2.48E-04
3015	479300	3622600	Residential	100m grid	1.46E-08	2.05E-08	1.74E-09	1.36E-08	2.33E-08	2.05E-08	1.04E-09	1.34E-08	2.94E-08	1.96E-08	9.06E-10	1.29E-08	3.68E-08	4.49E-08	4.99E-08	4.99E-08	1.74E-05
3016	479400	3622600	Residential	100m grid	1.74E-08	2.34E-08	1.97E-09	1.55E-08	2.64E-08	2.33E-08	1.18E-09	1.52E-08	3.33E-08	2.22E-08	1.03E-09	1.46E-08	4.28E-08	5.08E-08	5.65E-08	5.65E-08	1.97E-05
3017	479500	3622600	Residential	100m grid	2.15E-08	2.70E-08	2.25E-09	1.80E-08	3.01E-08	2.65E-08	1.34E-09	1.74E-08	3.80E-08	2.53E-08	1.17E-09	1.67E-08	5.07E-08	5.80E-08	6.44E-08	6.44E-08	2.24E-05
3018	479600	3622600	Residential	100m grid	2.55E-08	3.02E-08	2.48E-09	2.01E-08	3.33E-08	2.94E-08	1.49E-09	1.92E-08	4.20E-08	2.80E-08	1.29E-09	1.85E-08	5.81E-08	6.41E-08	7.12E-08	7.12E-08	2.48E-05
3019	479700	3622600	Residential	100m grid	2.93E-08	3.31E-08	2.70E-09	2.20E-08	3.61E-08	3.19E-08	1.62E-09	2.09E-08	4.56E-08	3.04E-08	1.41E-09	2.01E-08	6.51E-08	6.96E-08	7.74E-08	7.74E-08	2.70E-05
3020	479800	3622600	Residential	100m grid	3.39E-08	3.66E-08	2.96E-09	2.44E-08	3.96E-08	3.49E-08	1.77E-09	2.29E-08	5.00E-08	3.33E-08	1.54E-09	2.20E-08	7.34E-08	7.63E-08	8.48E-08	8.48E-08	2.95E-05
3028	480600	3622600	Residential	100m grid	8.58E-08	8.46E-08	6.70E-09	5.65E-08	8.97E-08	7.92E-08	4.01E-09	5.18E-08	1.13E-07	7.54E-08	3.49E-09	4.98E-08	1.77E-07	1.73E-07	1.92E-07	1.92E-07	6.69E-05
3029	480700	3622600	Residential	100m grid	9.59E-08	9.95E-08	7.97E-09	6.64E-08	1.07E-07	9.42E-08	4.77E-09	6.16E-08	1.35E-07	8.97E-08	4.15E-09	5.93E-08	2.03E-07	2.06E-07	2.29E-07	2.29E-07	7.96E-05
3030	480800	3622600	Residential	100m grid	1.11E-07	1.21E-07	9.76E-09	8.04E-08	1.31E-07	1.15E-07	5.85E-09	7.55E-08	1.65E-07	1.10E-07	5.09E-09	7.26E-08	2.41E-07	2.52E-07	2.80E-07	2.80E-07	9.75E-05
3055	483300	3622600	Residential	100m grid	2.41E-07	4.07E-07	3.54E-08	2.70E-07	4.74E-07	4.18E-07	2.12E-08	2.74E-07	5.99E-07	3.98E-07	1.84E-08	2.63E-07	6.84E-07	9.14E-07	1.02E-06	1.02E-06	3.54E-04
3056	483400	3622600	Residential	100m grid	2.31E-07	4.09E-07	3.57E-08	2.70E-07	4.78E-07	4.22E-07	2.14E-08	2.76E-07	6.04E-07	4.02E-07	1.86E-08	2.66E-07	6.75E-07	9.21E-07	1.02E-06	1.02E-06	3.57E-04
3057	483500	3622600	Residential	100m grid	1.62E-07	3.01E-07	2.64E-08	1.99E-07	3.54E-07	3.12E-07	1.58E-08	2.04E-07	4.47E-07	2.97E-07	1.38E-08	1.97E-07	4.90E-07	6.82E-07	7.58E-07	7.58E-07	2.64E-04
3058	483600	3622600	Residential	100m grid	1.37E-07	2.63E-07	2.32E-08	1.74E-07	3.11E-07	2.74E-07	1.39E-08	1.80E-07	3.93E-07	2.61E-07	1.21E-08	1.73E-07	4.23E-07	5.99E-07	6.66E-07	6.66E-07	2.32E-04
3059	479300	3622700	Residential	100m grid	1.60E-08	2.12E-08	1.77E-09	1.40E-08	2.38E-08	2.10E-08	1.06E-09	1.37E-08	3.00E-08	2.00E-08	9.24E-10	1.32E-08	3.89E-08	4.58E-08	5.09E-08	5.09E-08	1.77E-05
3060	479400	3622700	Residential	100m grid	1.77E-08	2.39E-08	2.01E-09	1.59E-08	2.69E-08	2.38E-08	1.20E-09	1.55E-08	3.40E-08	2.26E-08	1.05E-09	1.50E-08	4.37E-08	5.19E-08	5.77E-08	5.77E-08	2.01E-05
3061	479500	3622700	Residential	100m grid	2.02E-08	2.70E-08	2.27E-09	1.79E-08	3.04E-08	2.68E-08	1.36E-09	1.75E-08	3.83E-08	2.55E-08	1.18E-09	1.69E-08	4.95E-08	5.85E-08	6.50E-08	6.50E-08	2.26E-05
3062	479600	3622700	Residential	100m grid	2.26E-08	2.95E-08	2.47E-09	1.96E-08	3.31E-08	2.92E-08	1.48E-09	1.91E-08	4.17E-08	2.78E-08	1.29E-09	1.84E-08	5.46E-08	6.37E-08	7.08E-08	7.08E-08	2.47E-05
3063	479700	3622700	Residential	100m grid	2.59E-08	3.24E-08	2.70E-09	2.16E-08	3.61E-08	3.19E-08	1.61E-09	2.09E-08	4.56E-08	3.03E-08	1.41E-09	2.01E-08	6.10E-08	6.96E-08	7.74E-08	7.74E-08	2.69E-05
3064	479800	3622700	Residential	100m grid	3.05E-08	3.64E-08	3.00E-09	2.42E-08	4.02E-08	3.55E-08	1.80E-09	2.32E-08	5.07E-08	3.38E-08	1.56E-09	2.23E-08	7.00E-08	7.74E-08	8.61E-08	8.61E-08	3.00E-05
3065	479900	3622700	Residential	100m grid	3.58E-08	4.06E-08	3.31E-09	2.70E-08	4.44E-08	3.91E-08	1.98E-09	2.56E-08	5.60E-08	3.73E-08	1.73E-09	2.46E-08	7.97E-08	8.55E-08	9.50E-08	9.50E-08	3.31E-05
3072	480600	3622700	Residential	100m grid	9.69E-08	9.23E-08	7.24E-09	6.16E-08	9.70E-08	8.56E-08	4.33E-09	5.60E-08	1.22E-07	8.15E-08	3.77E-09	5.39E-08	1.96E-07	1.87E-07	2.08E-07	2.08E-07	7.23E-05
3073	480700	3622700	Residential	100m grid	1.12E-07	1.09E-07	8.59E-09	7.28E-08	1.15E-07	1.02E-07	5.14E-09	6.64E-08	1.45E-07	9.67E-08	4.48E-09	6.39E-08	2.30E-07	2.22E-07	2.46E-07	2.46E-07	8.58E-05
3074	480800	3622700	Residential	100m grid	1.30E-07	1.33E-07	1.06E-08	8.85E-08	1.42E-07	1.25E-07	6.34E-09	8.19E-08	1.79E-07	1.19E-07	5.51E-09	7.87E-08	2.73E-07	2.73E-07	3.04E-07	3.04E-07	1.06E-04
3092	482600	3622700	Residential	100m grid	7.70E-07	1.10E-06	9.36E-08	7.31E-07	1.25E-06	1.11E-06	5.60E-08	7.24E-07	1.58E-06	1.05E-06	4.87E-08	6.96E-07	1.97E-06	2.41E-06	2.68E-06	2.68E-06	9.35E-04
3093	482700	3622700	Residential	100m grid	6.75E-07	1.00E-06	8.58E-08	6.66E-07	1.15E-06	1.01E-06	5.14E-08	6.64E-07	1.45E-06	9.66E-07	4.47E-08	6.39E-07	1.77E-06	2.22E-06	2.46E-06	2.46E-06	8.58E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
3098	483200	3622700	Residential	100m grid	2.61E-07	4.98E-07	4.39E-08	3.29E-07	5.87E-07	5.18E-07	2.63E-08	3.39E-07	7.42E-07	4.94E-07	2.29E-08	3.26E-07	8.03E-07	1.13E-06	1.26E-06	1.26E-06	4.38E-04
3099	483300	3622700	Residential	100m grid	1.94E-07	3.85E-07	3.41E-08	2.54E-07	4.56E-07	4.03E-07	2.04E-08	2.63E-07	5.76E-07	3.83E-07	1.77E-08	2.53E-07	6.13E-07	8.79E-07	9.77E-07	9.77E-07	3.40E-04
3100	483400	3622700	Residential	100m grid	1.65E-07	3.36E-07	2.98E-08	2.22E-07	3.99E-07	3.52E-07	1.78E-08	2.30E-07	5.04E-07	3.35E-07	1.55E-08	2.22E-07	5.30E-07	7.69E-07	8.55E-07	8.55E-07	2.98E-04
3101	483500	3622700	Residential	100m grid	1.29E-07	2.69E-07	2.39E-08	1.77E-07	3.20E-07	2.82E-07	1.43E-08	1.85E-07	4.04E-07	2.69E-07	1.25E-08	1.78E-07	4.22E-07	6.17E-07	6.85E-07	6.85E-07	2.39E-04
3102	483600	3622700	Residential	100m grid	1.10E-07	2.32E-07	2.07E-08	1.53E-07	2.77E-07	2.45E-07	1.24E-08	1.60E-07	3.50E-07	2.33E-07	1.08E-08	1.54E-07	3.63E-07	5.34E-07	5.93E-07	5.93E-07	2.07E-04
3103	479300	3622800	Residential	100m grid	1.84E-08	2.12E-08	1.73E-09	1.41E-08	2.32E-08	2.05E-08	1.04E-09	1.34E-08	2.93E-08	1.95E-08	9.02E-10	1.29E-08	4.13E-08	4.47E-08	4.97E-08	4.97E-08	1.73E-05
3104	479400	3622800	Residential	100m grid	1.99E-08	2.37E-08	1.95E-09	1.58E-08	2.62E-08	2.31E-08	1.17E-09	1.51E-08	3.30E-08	2.20E-08	1.02E-09	1.45E-08	4.56E-08	5.04E-08	5.60E-08	5.60E-08	1.95E-05
3105	479500	3622800	Residential	100m grid	2.15E-08	2.65E-08	2.19E-09	1.76E-08	2.93E-08	2.59E-08	1.31E-09	1.70E-08	3.71E-08	2.47E-08	1.14E-09	1.63E-08	5.02E-08	5.66E-08	6.29E-08	6.29E-08	2.19E-05
3106	479600	3622800	Residential	100m grid	2.32E-08	2.91E-08	2.42E-09	1.94E-08	3.24E-08	2.86E-08	1.45E-09	1.87E-08	4.09E-08	2.72E-08	1.26E-09	1.80E-08	5.47E-08	6.25E-08	6.94E-08	6.94E-08	2.42E-05
3107	479700	3622800	Residential	100m grid	2.58E-08	3.25E-08	2.70E-09	2.16E-08	3.62E-08	3.20E-08	1.62E-09	2.09E-08	4.57E-08	3.04E-08	1.41E-09	2.01E-08	6.10E-08	6.98E-08	7.76E-08	7.76E-08	2.70E-05
3108	479800	3622800	Residential	100m grid	2.86E-08	3.59E-08	2.98E-09	2.38E-08	3.99E-08	3.52E-08	1.79E-09	2.31E-08	5.04E-08	3.36E-08	1.55E-09	2.22E-08	6.75E-08	7.70E-08	8.55E-08	8.55E-08	2.98E-05
3109	479900	3622800	Residential	100m grid	3.23E-08	3.97E-08	3.29E-09	2.64E-08	4.41E-08	3.89E-08	1.97E-09	2.55E-08	5.57E-08	3.71E-08	1.72E-09	2.45E-08	7.53E-08	8.50E-08	9.44E-08	9.44E-08	3.29E-05
3116	480600	3622800	Residential	100m grid	1.07E-07	1.01E-07	7.88E-09	6.73E-08	1.06E-07	9.32E-08	4.72E-09	6.10E-08	1.33E-07	8.87E-08	4.11E-09	5.87E-08	2.16E-07	2.04E-07	2.26E-07	2.26E-07	7.88E-05
3117	480700	3622800	Residential	100m grid	1.29E-07	1.20E-07	9.39E-09	8.04E-08	1.26E-07	1.11E-07	5.62E-09	7.27E-08	1.59E-07	1.06E-07	4.89E-09	6.99E-08	2.59E-07	2.42E-07	2.69E-07	2.69E-07	9.38E-05
3118	480800	3622800	Residential	100m grid	1.55E-07	1.48E-07	1.16E-08	9.88E-08	1.55E-07	1.37E-07	6.94E-09	8.97E-08	1.96E-07	1.30E-07	6.04E-09	8.63E-08	3.15E-07	2.99E-07	3.33E-07	3.33E-07	1.16E-04
3132	483100	3622800	Residential	100m grid	2.30E-07	4.92E-07	4.39E-08	3.25E-07	5.88E-07	5.19E-07	2.63E-08	3.40E-07	7.42E-07	4.94E-07	2.29E-08	3.27E-07	7.66E-07	1.13E-06	1.26E-06	1.26E-06	4.39E-04
3133	483200	3622800	Residential	100m grid	1.77E-07	3.85E-07	3.44E-08	2.54E-07	4.61E-07	4.07E-07	2.06E-08	2.66E-07	5.82E-07	3.87E-07	1.79E-08	2.56E-07	5.97E-07	8.89E-07	9.88E-07	9.88E-07	3.44E-04
3134	483300	3622800	Residential	100m grid	1.55E-07	3.40E-07	3.04E-08	2.24E-07	4.07E-07	3.59E-07	1.82E-08	2.35E-07	5.13E-07	3.42E-07	1.58E-08	2.26E-07	5.25E-07	7.83E-07	8.71E-07	8.71E-07	3.03E-04
3135	483400	3622800	Residential	100m grid	1.20E-07	2.63E-07	2.35E-08	1.74E-07	3.15E-07	2.78E-07	1.41E-08	1.82E-07	3.97E-07	2.64E-07	1.22E-08	1.75E-07	4.06E-07	6.06E-07	6.74E-07	6.74E-07	2.35E-04
3136	483500	3622800	Residential	100m grid	1.06E-07	2.30E-07	2.05E-08	1.52E-07	2.74E-07	2.42E-07	1.23E-08	1.59E-07	3.47E-07	2.31E-07	1.07E-08	1.52E-07	3.56E-07	5.29E-07	5.88E-07	5.88E-07	2.05E-04
3137	483600	3622800	Residential	100m grid	9.32E-08	1.99E-07	1.78E-08	1.32E-07	2.38E-07	2.10E-07	1.06E-08	1.38E-07	3.01E-07	2.00E-07	9.27E-09	1.32E-07	3.10E-07	4.59E-07	5.10E-07	5.10E-07	1.78E-04
3138	479300	3622900	Residential	100m grid	1.88E-08	2.12E-08	1.72E-09	1.41E-08	2.31E-08	2.04E-08	1.03E-09	1.33E-08	2.91E-08	1.94E-08	8.97E-10	1.28E-08	4.17E-08	4.45E-08	4.94E-08	4.94E-08	1.72E-05
3139	479400	3622900	Residential	100m grid	2.09E-08	2.37E-08	1.93E-09	1.58E-08	2.59E-08	2.28E-08	1.16E-09	1.49E-08	3.26E-08	2.17E-08	1.01E-09	1.44E-08	4.65E-08	4.98E-08	5.54E-08	5.54E-08	1.93E-05
3140	479500	3622900	Residential	100m grid	2.30E-08	2.64E-08	2.16E-09	1.76E-08	2.89E-08	2.55E-08	1.29E-09	1.67E-08	3.64E-08	2.43E-08	1.12E-09	1.60E-08	5.16E-08	5.56E-08	6.18E-08	6.18E-08	2.15E-05
3141	479600	3622900	Residential	100m grid	2.53E-08	2.93E-08	2.40E-09	1.95E-08	3.22E-08	2.84E-08	1.44E-09	1.86E-08	4.06E-08	2.70E-08	1.25E-09	1.79E-08	5.70E-08	6.20E-08	6.89E-08	6.89E-08	2.40E-05
3142	479700	3622900	Residential	100m grid	2.74E-08	3.22E-08	2.65E-09	2.15E-08	3.55E-08	3.13E-08	1.59E-09	2.05E-08	4.48E-08	2.98E-08	1.38E-09	1.97E-08	6.23E-08	6.83E-08	7.59E-08	7.59E-08	2.65E-05
3143	479800	3622900	Residential	100m grid	2.98E-08	3.54E-08	2.92E-09	2.36E-08	3.91E-08	3.45E-08	1.75E-09	2.26E-08	4.93E-08	3.28E-08	1.52E-09	2.17E-08	6.82E-08	7.53E-08	8.36E-08	8.36E-08	2.91E-05
3144	479900	3622900	Residential	100m grid	3.33E-08	3.98E-08	3.28E-09	2.65E-08	4.40E-08	3.88E-08	1.97E-09	2.54E-08	5.55E-08	3.70E-08	1.71E-09	2.44E-08	7.64E-08	8.48E-08	9.42E-08	9.42E-08	3.28E-05
3145	480000	3622900	Residential	100m grid	3.82E-08	4.55E-08	3.75E-09	3.03E-08	5.02E-08	4.43E-08	2.25E-09	2.90E-08	6.34E-08	4.22E-08	1.95E-09	2.79E-08	8.75E-08	9.68E-08	1.08E-07	1.08E-07	3.75E-05
3148	480300	3622900	Residential	100m grid	6.47E-08	6.96E-08	5.62E-09	4.64E-08	7.53E-08	6.64E-08	3.36E-09	4.35E-08	9.50E-08	6.32E-08	2.93E-09	4.18E-08	1.40E-07	1.45E-07	1.61E-07	1.61E-07	5.61E-05
3150	480500	3622900	Residential	100m grid	9.38E-08	9.23E-08	7.30E-09	6.16E-08	9.77E-08	8.63E-08	4.37E-09	5.64E-08	1.23E-07	8.21E-08	3.80E-09	5.43E-08	1.93E-07	1.88E-07	2.09E-07	2.09E-07	7.29E-05
3151	480600	3622900	Residential	100m grid	1.15E-07	1.09E-07	8.59E-09	7.31E-08	1.15E-07	1.01E-07	5.14E-09	6.64E-08	1.45E-07	9.66E-08	4.47E-09	6.39E-08	2.33E-07	2.22E-07	2.46E-07	2.46E-07	8.58E-05
3152	480700	3622900	Residential	100m grid	1.43E-07	1.33E-07	1.04E-08	8.90E-08	1.39E-07	1.23E-07	6.22E-09	8.03E-08	1.76E-07	1.17E-07	5.41E-09	7.72E-08	2.87E-07	2.68E-07	2.98E-07	2.98E-07	1.04E-04
3153	480800	3622900	Residential	100m grid	1.82E-07	1.66E-07	1.29E-08	1.11E-07	1.73E-07	1.52E-07	7.72E-09	9.98E-08	2.18E-07	1.45E-07	6.72E-09	9.60E-08	3.61E-07	3.33E-07	3.70E-07	3.70E-07	1.29E-04
3157	482300	3622900	Residential	100m grid	1.07E-06	1.99E-06	1.75E-07	1.32E-06	2.35E-06	2.07E-06	1.05E-07	1.36E-06	2.96E-06	1.97E-06	9.13E-08	1.30E-06	3.24E-06	4.52E-06	5.03E-06	5.03E-06	1.75E-03
3158	482400	3622900	Residential	100m grid	8.50E-07	1.66E-06	1.47E-07	1.10E-06	1.97E-06	1.74E-06	8.81E-08	1.14E-06	2.49E-06	1.66E-06	7.66E-08	1.09E-06	2.66E-06	3.80E-06	4.22E-06	4.22E-06	1.47E-03
3161	482700	3622900	Residential	100m grid	3.79E-07	8.48E-07	7.60E-08	5.60E-07	1.02E-06	8.98E-07	4.55E-08	5.87E-07	1.28E-06	8.55E-07	3.96E-08	5.65E-07	1.30E-06	1.96E-06	2.18E-06	2.18E-06	7.59E-04
3162	482800	3622900	Residential	100m grid	3.15E-07	7.26E-07	6.52E-08	4.79E-07	8.73E-07	7.70E-07	3.90E-08	5.04E-07	1.10E-06	7.33E-07	3.40E-08	4.85E-07	1.11E-06	1.68E-06	1.87E-06	1.87E-06	6.51E-04
3163	482900	3622900	Residential	100m grid	2.37E-07	5.53E-07	4.97E-08	3.65E-07	6.66E-07	5.88E-07	2.98E-08	3.85E-07	8.41E-07	5.60E-07	2.59E-08	3.70E-07	8.40E-07	1.28E-06	1.43E-06	1.43E-06	4.97E-04
3164	483000	3622900	Residential	100m grid	2.10E-07	4.94E-07	4.45E-08	3.26E-07	5.96E-07	5.26E-07	2.66E-08	3.44E-07	7.52E-07	5.01E-07	2.32E-08	3.31E-07	7.49E-07	1.15E-06	1.28E-06	1.28E-06	4.44E-04
3165	483100	3622900	Residential	100m grid	1.67E-07	3.89E-07	3.50E-08	2.57E-07	4.69E-07	4.14E-07	2.09E-08	2.71E-07	5.92E-07	3.94E-07	1.82E-08	2.60E-07	5.91E-07	9.03E-07	1.00E-06	1.00E-06	3.50E-04
3166	483200	3622900	Residential	100m grid	1.37E-07	3.13E-07	2.81E-08	2.06E-07	3.76E-07	3.32E-07	1.68E-08	2.17E-07	4.74E-07	3.16E-07	1.46E-08	2.09E-07	4.77E-07	7.24E-07	8.05E-07	8.05E-07	2.80E-04
3167	483300	3622900	Residential	100m grid	1.13E-07	2.53E-07	2.27E-08	1.67E-07	3.04E-07	2.68E-07	1.36E-08	1.76E-07	3.84E-07	2.55E-07	1.18E-08	1.69E-07	3.89E-07	5.86E-07	6.51E-07	6.51E-07	2.27E-04
3168	483400	3622900	Residential	100m grid	1.03E-07	2.24E-07	2.00E-08	1.48E-07	2.67E-07	2.36E-07	1.20E-08	1.54E-07	3.38E-07	2.25E-07	1.04E-08	1.49E-07	3.46E-07	5.16E-07	5.73E-07	5.73E-07	2.00E-04
3169	483500	3622900	Residential	100m grid	9.00E-08	1.91E-07	1.70E-08	1.26E-07	2.28E-07	2.01E-07	1.02E-08	1.32E-07	2.88E-07	1.91E-07	8.87E-09	1.27E-07	2.98E-07	4.39E-07	4.88E-07	4.88E-07	1.70E-04
3170	483600	3622900	Residential	100m grid	8.27E-08	1.70E-07	1.51E-08	1.12E-07	2.02E-07	1.78E-07	9.03E-09	1.17E-07	2.55E-07	1.70E-07	7.86E-09	1.12E-07	2.68E-07	3.89E-07	4.33E-07	4.33E-07	1.51E-04
3171	479300	3623000	Residential	100m grid	1.67E-08	2.04E-08	1.69E-09	1.36E-08	2.26E-08	2.00E-08	1.01E-09	1.31E-08	2.85E-08	1.90E-08	8.80E-10	1.26E-08	3.88E-08	4.36E-08	4.84E-08	4.84E-08	1.69E-05
3172	479400	3623000	Residential	100m grid	1.89E-08	2.30E-08	1.90E-09	1.53E-08	2.54E-08	2.24E-08	1.14E-09	1.47E-08	3.21E-08	2.14E-08	9.89E-10	1.41E-08	4.38E-08	4.90E-08	5.45E-08	5.45E-08	1.90E-05
3173	479500	3623000	Residential	100m grid	2.27E-08	2.74E-08	2.26E-09	1.82E-08	3.03E-08	2.68E-08	1.35E-09	1.75E-08	3.83E-08	2.55E-08	1.18E-09	1.68E-08	5.23E-08	5.84E-08	6.49E-08	6.49E-08	2.26E-05
3174	479600	3623000	Residential	100m grid	2.55E-08	3.07E-08	2.53E-09	2.04E-08	3.39E-08	2.99E-08	1.52E-09	1.96E-08	4.28E-08	2.85E-08	1.32E-09	1.88E-08	5.87E-08	6.53E-08	7.26E-08	7.26E-08	2.53E-05
3175	479700	3623000	Residential	100m grid	2.70E-08	3.22E-08	2.66E-09	2.14E-08	3.56E-08	3.14E-08	1.59E-09	2.05E-08	4.49E-08	2.99E-08	1.38E-09	1.98E-08	6.19E-08	6.85E-08	7.62E-08	7.62E-08	2.65E-05
3176	479800	3623000	Residential	100m grid	3.02E-08	3.59E-08	2.95E-09	2.39E-08	3.96E-08	3.49E-08	1.77E-09	2.29E-08	5.00E-08	3.32E-08	1.54E-09	2.20E-08	6.90E-08	7.63E-08	8.47E-08	8.47E-08	2.95E-05
3177	479900	3623000	Residential	100m grid	3.44E-08	4.07E-08	3.35E-09	2.71E-08	4.48E-08	3.96E-08	2.00E-09	2.59E-08	5.66E-08	3.77E-08	1.74E-09	2.49E-08	7.84E-08	8.64E-08	9.60E-08	9.60E-08	3.35E-05
3178	480000	3623000	Residential	100m grid	3.88E-08	4.57E-08	3.75E-09	3.04E-08	5.02E-08	4.43E-08	2.25E-09	2.90E-08	6.34E-08	4.22E-08	1.95E-09	2.79E-08	8.82E-08	9.68E-08	1.08E-07	1.08E-07	3.75E-05

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
					Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3179	480100	3623000	Residential	100m grid	4.48E-08	5.25E-08	4.31E-09	3.49E-08	5.77E-08	5.09E-08	2.58E-09	3.33E-08	7.28E-08	4.85E-08	2.24E-09	3.21E-08	1.02E-07	1.11E-07	1.24E-07	1.24E-07	4.30E-05
3181	480300	3623000	Residential	100m grid	6.42E-08	7.18E-08	5.84E-09	4.79E-08	7.83E-08	6.91E-08	3.50E-09	4.52E-08	9.88E-08	6.58E-08	3.05E-09	4.35E-08	1.42E-07	1.51E-07	1.68E-07	1.68E-07	5.84E-05
3182	480400	3623000	Residential	100m grid	7.68E-08	8.34E-08	6.74E-09	5.56E-08	9.03E-08	7.97E-08	4.04E-09	5.21E-08	1.14E-07	7.59E-08	3.51E-09	5.02E-08	1.67E-07	1.74E-07	1.93E-07	1.93E-07	6.73E-05
3183	480500	3623000	Residential	100m grid	9.38E-08	9.79E-08	7.85E-09	6.53E-08	1.05E-07	9.28E-08	4.70E-09	6.07E-08	1.33E-07	8.83E-08	4.09E-09	5.84E-08	2.00E-07	2.03E-07	2.25E-07	2.25E-07	7.84E-05
3184	480600	3623000	Residential	100m grid	1.18E-07	1.18E-07	9.34E-09	7.85E-08	1.25E-07	1.10E-07	5.59E-09	7.22E-08	1.58E-07	1.05E-07	4.87E-09	6.95E-08	2.45E-07	2.41E-07	2.68E-07	2.68E-07	9.33E-05
3185	480700	3623000	Residential	100m grid	1.52E-07	1.46E-07	1.15E-08	9.78E-08	1.54E-07	1.36E-07	6.90E-09	8.91E-08	1.95E-07	1.30E-07	6.00E-09	8.57E-08	3.10E-07	2.97E-07	3.30E-07	3.30E-07	1.15E-04
3186	480800	3623000	Residential	100m grid	2.03E-07	1.88E-07	1.47E-08	1.26E-07	1.97E-07	1.73E-07	8.78E-09	1.14E-07	2.48E-07	1.65E-07	7.65E-09	1.09E-07	4.06E-07	3.79E-07	4.21E-07	4.21E-07	1.47E-04
3188	482400	3623000	Residential	100m grid	5.63E-07	1.43E-06	1.30E-07	9.44E-07	1.74E-06	1.53E-06	7.76E-08	1.00E-06	2.19E-06	1.46E-06	6.76E-08	9.65E-07	2.12E-06	3.35E-06	3.72E-06	3.72E-06	1.30E-03
3191	482700	3623000	Residential	100m grid	2.73E-07	7.10E-07	6.44E-08	4.68E-07	8.62E-07	7.61E-07	3.85E-08	4.98E-07	1.09E-06	7.24E-07	3.35E-08	4.79E-07	1.05E-06	1.66E-06	1.85E-06	1.85E-06	6.43E-04
3192	482800	3623000	Residential	100m grid	2.13E-07	5.45E-07	4.94E-08	3.59E-07	6.61E-07	5.83E-07	2.96E-08	3.82E-07	8.35E-07	5.55E-07	2.57E-08	3.67E-07	8.08E-07	1.27E-06	1.42E-06	1.42E-06	4.93E-04
3193	482900	3623000	Residential	100m grid	1.65E-07	4.11E-07	3.72E-08	2.71E-07	4.98E-07	4.39E-07	2.22E-08	2.87E-07	6.28E-07	4.18E-07	1.94E-08	2.76E-07	6.14E-07	9.59E-07	1.07E-06	1.07E-06	3.71E-04
3194	483000	3623000	Residential	100m grid	1.41E-07	3.42E-07	3.08E-08	2.25E-07	4.13E-07	3.64E-07	1.85E-08	2.38E-07	5.21E-07	3.47E-07	1.61E-08	2.29E-07	5.14E-07	7.96E-07	8.84E-07	8.84E-07	3.08E-04
3195	483100	3623000	Residential	100m grid	1.44E-07	3.46E-07	3.12E-08	2.28E-07	4.17E-07	3.68E-07	1.87E-08	2.41E-07	5.27E-07	3.51E-07	1.62E-08	2.32E-07	5.21E-07	8.04E-07	8.94E-07	8.94E-07	3.11E-04
3196	483200	3623000	Residential	100m grid	1.07E-07	2.43E-07	2.18E-08	1.60E-07	2.91E-07	2.57E-07	1.30E-08	1.68E-07	3.68E-07	2.45E-07	1.13E-08	1.62E-07	3.71E-07	5.62E-07	6.24E-07	6.24E-07	2.17E-04
3197	483300	3623000	Residential	100m grid	9.55E-08	2.10E-07	1.88E-08	1.39E-07	2.52E-07	2.22E-07	1.12E-08	1.45E-07	3.18E-07	2.11E-07	9.79E-09	1.40E-07	3.24E-07	4.85E-07	5.39E-07	5.39E-07	1.88E-04
3198	483400	3623000	Residential	100m grid	8.52E-08	1.82E-07	1.62E-08	1.20E-07	2.17E-07	1.91E-07	9.69E-09	1.25E-07	2.74E-07	1.82E-07	8.44E-09	1.20E-07	2.83E-07	4.18E-07	4.64E-07	4.64E-07	1.62E-04
3199	483500	3623000	Residential	100m grid	7.74E-08	1.60E-07	1.42E-08	1.06E-07	1.90E-07	1.68E-07	8.50E-09	1.10E-07	2.40E-07	1.60E-07	7.40E-09	1.06E-07	2.51E-07	3.66E-07	4.07E-07	4.07E-07	1.42E-04
3200	483600	3623000	Residential	100m grid	7.12E-08	1.43E-07	1.26E-08	9.42E-08	1.69E-07	1.49E-07	7.56E-09	9.77E-08	2.14E-07	1.42E-07	6.58E-09	9.40E-08	2.26E-07	3.26E-07	3.62E-07	3.62E-07	1.26E-04
3201	479300	3623100	Residential	100m grid	1.62E-08	2.00E-08	1.66E-09	1.33E-08	2.22E-08	1.96E-08	9.93E-10	1.28E-08	2.80E-08	1.87E-08	8.64E-10	1.23E-08	3.78E-08	4.28E-08	4.76E-08	4.76E-08	1.66E-05
3202	479400	3623100	Residential	100m grid	1.87E-08	2.29E-08	1.90E-09	1.52E-08	2.54E-08	2.24E-08	1.14E-09	1.47E-08	3.21E-08	2.14E-08	9.89E-10	1.41E-08	4.35E-08	4.90E-08	5.44E-08	5.44E-08	1.90E-05
3203	479500	3623100	Residential	100m grid	2.12E-08	2.58E-08	2.13E-09	1.72E-08	2.86E-08	2.52E-08	1.28E-09	1.65E-08	3.61E-08	2.40E-08	1.11E-09	1.59E-08	4.91E-08	5.51E-08	6.12E-08	6.12E-08	2.13E-05
3204	479600	3623100	Residential	100m grid	2.37E-08	2.89E-08	2.39E-09	1.92E-08	3.20E-08	2.82E-08	1.43E-09	1.85E-08	4.03E-08	2.68E-08	1.24E-09	1.77E-08	5.49E-08	6.16E-08	6.84E-08	6.84E-08	2.38E-05
3205	479700	3623100	Residential	100m grid	2.88E-08	3.45E-08	2.84E-09	2.29E-08	3.80E-08	3.36E-08	1.70E-09	2.20E-08	4.80E-08	3.20E-08	1.48E-09	2.11E-08	6.61E-08	7.33E-08	8.15E-08	8.15E-08	2.84E-05
3206	479800	3623100	Residential	100m grid	2.94E-08	3.59E-08	2.97E-09	2.39E-08	3.98E-08	3.51E-08	1.78E-09	2.30E-08	5.02E-08	3.34E-08	1.55E-09	2.21E-08	6.83E-08	7.66E-08	8.51E-08	8.51E-08	2.97E-05
3207	479900	3623100	Residential	100m grid	3.34E-08	4.06E-08	3.36E-09	2.70E-08	4.50E-08	3.97E-08	2.01E-09	2.60E-08	5.68E-08	3.78E-08	1.75E-09	2.50E-08	7.74E-08	8.67E-08	9.63E-08	9.63E-08	3.36E-05
3208	480000	3623100	Residential	100m grid	3.77E-08	4.56E-08	3.77E-09	3.04E-08	5.05E-08	4.46E-08	2.26E-09	2.92E-08	6.37E-08	4.24E-08	1.96E-09	2.80E-08	8.71E-08	9.73E-08	1.08E-07	1.08E-07	3.77E-05
3209	480100	3623100	Residential	100m grid	4.34E-08	5.19E-08	4.28E-09	3.45E-08	5.73E-08	5.05E-08	2.56E-09	3.31E-08	7.23E-08	4.81E-08	2.23E-09	3.18E-08	9.96E-08	1.10E-07	1.23E-07	1.23E-07	4.27E-05
3212	480400	3623100	Residential	100m grid	7.82E-08	8.72E-08	7.09E-09	5.81E-08	9.50E-08	8.38E-08	4.25E-09	5.49E-08	1.20E-07	7.98E-08	3.70E-09	5.28E-08	1.73E-07	1.83E-07	2.03E-07	2.03E-07	7.09E-05
3213	480500	3623100	Residential	100m grid	9.53E-08	1.04E-07	8.38E-09	6.91E-08	1.12E-07	9.91E-08	5.02E-09	6.48E-08	1.42E-07	9.43E-08	4.37E-09	6.24E-08	2.07E-07	2.16E-07	2.40E-07	2.40E-07	8.37E-05
3214	480600	3623100	Residential	100m grid	1.19E-07	1.26E-07	1.01E-08	8.40E-08	1.36E-07	1.20E-07	6.06E-09	7.83E-08	1.71E-07	1.14E-07	5.28E-09	7.53E-08	2.56E-07	2.61E-07	2.90E-07	2.90E-07	1.01E-04
3215	480700	3623100	Residential	100m grid	1.55E-07	1.60E-07	1.28E-08	1.07E-07	1.71E-07	1.51E-07	7.66E-09	9.90E-08	2.16E-07	1.44E-07	6.67E-09	9.52E-08	3.28E-07	3.30E-07	3.67E-07	3.67E-07	1.28E-04
3219	482400	3623100	Residential	100m grid	3.50E-07	1.07E-06	9.79E-08	7.03E-07	1.31E-06	1.16E-06	5.86E-08	7.57E-07	1.66E-06	1.10E-06	5.10E-08	7.28E-07	1.52E-06	2.53E-06	2.81E-06	2.81E-06	9.78E-04
3220	482500	3623100	Residential	100m grid	2.71E-07	8.02E-07	7.35E-08	5.28E-07	9.84E-07	8.68E-07	4.40E-08	5.68E-07	1.24E-06	8.27E-07	3.83E-08	5.47E-07	1.15E-06	1.90E-06	2.11E-06	2.11E-06	7.34E-04
3221	482600	3623100	Residential	100m grid	1.98E-07	5.63E-07	5.14E-08	3.71E-07	6.88E-07	6.07E-07	3.08E-08	3.97E-07	8.69E-07	5.78E-07	2.68E-08	3.82E-07	8.12E-07	1.33E-06	1.47E-06	1.47E-06	5.13E-04
3222	482700	3623100	Residential	100m grid	1.68E-07	4.62E-07	4.20E-08	3.04E-07	5.63E-07	4.97E-07	2.52E-08	3.25E-07	7.11E-07	4.73E-07	2.19E-08	3.13E-07	6.71E-07	1.08E-06	1.21E-06	1.21E-06	4.20E-04
3223	482800	3623100	Residential	100m grid	1.64E-07	4.40E-07	4.00E-08	2.90E-07	5.36E-07	4.73E-07	2.39E-08	3.09E-07	6.76E-07	4.50E-07	2.08E-08	2.98E-07	6.44E-07	1.03E-06	1.15E-06	1.15E-06	3.99E-04
3224	482900	3623100	Residential	100m grid	1.24E-07	3.16E-07	2.86E-08	2.08E-07	3.83E-07	3.38E-07	1.71E-08	2.21E-07	4.83E-07	3.22E-07	1.49E-08	2.13E-07	4.68E-07	7.38E-07	8.20E-07	8.20E-07	2.86E-04
3225	483000	3623100	Residential	100m grid	1.07E-07	2.64E-07	2.38E-08	1.74E-07	3.19E-07	2.82E-07	1.43E-08	1.84E-07	4.03E-07	2.68E-07	1.24E-08	1.77E-07	3.95E-07	6.15E-07	6.83E-07	6.83E-07	2.38E-04
3226	483100	3623100	Residential	100m grid	1.04E-07	2.47E-07	2.22E-08	1.63E-07	2.98E-07	2.63E-07	1.33E-08	1.72E-07	3.76E-07	2.50E-07	1.16E-08	1.65E-07	3.73E-07	5.74E-07	6.38E-07	6.38E-07	2.22E-04
3227	483200	3623100	Residential	100m grid	9.23E-08	2.11E-07	1.89E-08	1.39E-07	2.53E-07	2.23E-07	1.13E-08	1.46E-07	3.20E-07	2.13E-07	9.85E-09	1.41E-07	3.22E-07	4.88E-07	5.42E-07	5.42E-07	1.89E-04
3228	483300	3623100	Residential	100m grid	7.62E-08	1.68E-07	1.51E-08	1.11E-07	2.02E-07	1.78E-07	9.02E-09	1.17E-07	2.55E-07	1.70E-07	7.85E-09	1.12E-07	2.60E-07	3.89E-07	4.32E-07	4.32E-07	1.51E-04
3229	483400	3623100	Residential	100m grid	6.93E-08	1.48E-07	1.32E-08	9.80E-08	1.77E-07	1.56E-07	7.92E-09	1.02E-07	2.24E-07	1.49E-07	6.90E-09	9.85E-08	2.31E-07	3.42E-07	3.80E-07	3.80E-07	1.32E-04
3230	483500	3623100	Residential	100m grid	6.34E-08	1.32E-07	1.17E-08	8.70E-08	1.57E-07	1.38E-07	7.01E-09	9.06E-08	1.98E-07	1.32E-07	6.10E-09	8.71E-08	2.07E-07	3.02E-07	3.36E-07	3.36E-07	1.17E-04
3231	483600	3623100	Residential	100m grid	5.86E-08	1.18E-07	1.05E-08	7.82E-08	1.41E-07	1.24E-07	6.29E-09	8.12E-08	1.78E-07	1.18E-07	5.47E-09	7.81E-08	1.87E-07	2.71E-07	3.01E-07	3.01E-07	1.05E-04
3232	479300	3623200	Residential	100m grid	1.97E-08	2.15E-08	1.74E-09	1.43E-08	2.33E-08	2.05E-08	1.04E-09	1.34E-08	2.94E-08	1.96E-08	9.05E-10	1.29E-08	4.29E-08	4.48E-08	4.98E-08	4.98E-08	1.74E-05
3233	479400	3623200	Residential	100m grid	2.22E-08	2.40E-08	1.94E-09	1.60E-08	2.60E-08	2.29E-08	1.16E-09	1.50E-08	3.28E-08	2.18E-08	1.01E-09	1.44E-08	4.82E-08	5.01E-08	5.57E-08	5.57E-08	1.94E-05
3234	479500	3623200	Residential	100m grid	2.64E-08	2.83E-08	2.28E-09	1.89E-08	3.05E-08	2.69E-08	1.36E-09	1.76E-08	3.85E-08	2.57E-08	1.19E-09	1.70E-08	5.70E-08	5.88E-08	6.54E-08	6.54E-08	2.28E-05
3235	479600	3623200	Residential	100m grid	3.07E-08	3.27E-08	2.64E-09	2.18E-08	3.53E-08	3.12E-08	1.58E-09	2.04E-08	4.46E-08	2.97E-08	1.37E-09	1.96E-08	6.61E-08	6.81E-08	7.57E-08	7.57E-08	2.64E-05
3236	479700	3623200	Residential	100m grid	3.26E-08	3.48E-08	2.81E-09	2.32E-08	3.76E-08	3.32E-08	1.68E-09	2.17E-08	4.75E-08	3.16E-08	1.46E-09	2.09E-08	7.02E-08	7.24E-08	8.05E-08	8.05E-08	2.80E-05
3237	479800	3623200	Residential	100m grid	3.79E-08	4.07E-08	3.28E-09	2.71E-08	4.40E-08	3.88E-08	1.97E-09	2.54E-08	5.55E-08	3.69E-08	1.71E-09	2.44E-08	8.19E-08	8.47E-08	9.42E-08	9.42E-08	3.28E-05
3238	479900	3623200	Residential	100m grid	4.13E-08	4.45E-08	3.59E-09	2.96E-08	4.81E-08	4.24E-08	2.15E-09	2.78E-08	6.07E-08	4.04E-08	1.87E-09	2.67E-08	8.93E-08	9.27E-08	1.03E-07	1.03E-07	3.59E-05
3239	480000	3623200	Residential	100m grid	4.35E-08	4.74E-08	3.83E-09	3.16E-08	5.13E-08	4.53E-08	2.29E-09	2.96E-08	6.48E-08	4.31E-08	2.00E-09	2.85E-08	9.46E-08	9.89E-08	1.10E-07	1.10E-07	3.83E-05
3240	480100	3623200	Residential	100m grid	4.87E-08	5.34E-08	4.33E-09	3.56E-08	5.80E-08	5.12E-08	2.59E-09	3.35E-08	7.32E-08	4.87E-08	2.26E-09	3.22E-08	1.06E-07	1.12E-07	1.24E-07	1.24E-07	4.33E-05
3241	480200	3623200	Residential	100m grid	5.88E-08	6.43E-08	5.21E-09	4.29E-08	6.98E-08	6.16E-08	3.12E-09	4.03E-08	8.81E-08	5.86E-08	2.71E-09	3.88E-08	1.28E-07	1.34E-07	1.49E-07	1.49E-07	5.20E-05

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
3244	480500	3623200	Residential	100m grid	1.05E-07	1.12E-07	8.97E-09	7.44E-08	1.20E-07	1.06E-07	5.37E-09	6.94E-08	1.52E-07	1.01E-07	4.68E-09	6.68E-08	2.26E-07	2.32E-07	2.57E-07	2.57E-07	8.96E-05
3250	482300	3623200	Residential	100m grid	2.76E-07	9.76E-07	9.04E-08	6.42E-07	1.21E-06	1.07E-06	5.41E-08	6.99E-07	1.53E-06	1.02E-06	4.71E-08	6.73E-07	1.34E-06	2.33E-06	2.59E-06	2.59E-06	9.03E-04
3251	482400	3623200	Residential	100m grid	2.03E-07	6.78E-07	6.25E-08	4.46E-07	8.37E-07	7.39E-07	3.74E-08	4.84E-07	1.06E-06	7.04E-07	3.26E-08	4.65E-07	9.43E-07	1.61E-06	1.79E-06	1.79E-06	6.25E-04
3252	482500	3623200	Residential	100m grid	1.68E-07	5.32E-07	4.89E-08	3.50E-07	6.55E-07	5.78E-07	2.93E-08	3.78E-07	8.27E-07	5.50E-07	2.55E-08	3.64E-07	7.49E-07	1.26E-06	1.40E-06	1.40E-06	4.89E-04
3253	482600	3623200	Residential	100m grid	1.40E-07	4.21E-07	3.86E-08	2.77E-07	5.17E-07	4.56E-07	2.31E-08	2.98E-07	6.52E-07	4.34E-07	2.01E-08	2.87E-07	6.00E-07	9.96E-07	1.11E-06	1.11E-06	3.85E-04
3254	482700	3623200	Residential	100m grid	1.21E-07	3.45E-07	3.15E-08	2.27E-07	4.22E-07	3.72E-07	1.89E-08	2.44E-07	5.33E-07	3.54E-07	1.64E-08	2.34E-07	4.97E-07	8.13E-07	9.03E-07	9.03E-07	3.15E-04
3255	482800	3623200	Residential	100m grid	1.14E-07	3.07E-07	2.79E-08	2.02E-07	3.74E-07	3.30E-07	1.67E-08	2.16E-07	4.72E-07	3.14E-07	1.45E-08	2.08E-07	4.49E-07	7.21E-07	8.01E-07	8.01E-07	2.79E-04
3256	482900	3623200	Residential	100m grid	1.00E-07	2.58E-07	2.34E-08	1.70E-07	3.13E-07	2.76E-07	1.40E-08	1.81E-07	3.95E-07	2.63E-07	1.22E-08	1.74E-07	3.82E-07	6.03E-07	6.70E-07	6.70E-07	2.34E-04
3257	483000	3623200	Residential	100m grid	8.37E-08	2.06E-07	1.87E-08	1.36E-07	2.50E-07	2.20E-07	1.12E-08	1.44E-07	3.15E-07	2.10E-07	9.72E-09	1.39E-07	3.09E-07	4.81E-07	5.35E-07	5.35E-07	1.86E-04
3258	483100	3623200	Residential	100m grid	7.68E-08	1.81E-07	1.63E-08	1.19E-07	2.18E-07	1.93E-07	9.75E-09	1.26E-07	2.75E-07	1.83E-07	8.49E-09	1.21E-07	2.74E-07	4.20E-07	4.67E-07	4.67E-07	1.63E-04
3259	483200	3623200	Residential	100m grid	7.26E-08	1.64E-07	1.47E-08	1.08E-07	1.97E-07	1.74E-07	8.81E-09	1.14E-07	2.49E-07	1.66E-07	7.67E-09	1.09E-07	2.52E-07	3.80E-07	4.22E-07	4.22E-07	1.47E-04
3260	483300	3623200	Residential	100m grid	6.76E-08	1.47E-07	1.32E-08	9.72E-08	1.76E-07	1.56E-07	7.88E-09	1.02E-07	2.23E-07	1.48E-07	6.86E-09	9.79E-08	2.28E-07	3.40E-07	3.77E-07	3.77E-07	1.31E-04
3261	483400	3623200	Residential	100m grid	5.76E-08	1.22E-07	1.09E-08	8.07E-08	1.46E-07	1.29E-07	6.52E-09	8.42E-08	1.84E-07	1.22E-07	5.67E-09	8.10E-08	1.91E-07	2.81E-07	3.12E-07	3.12E-07	1.09E-04
3262	483500	3623200	Residential	100m grid	5.30E-08	1.09E-07	9.71E-09	7.22E-08	1.30E-07	1.15E-07	5.81E-09	7.51E-08	1.64E-07	1.09E-07	5.06E-09	7.22E-08	1.72E-07	2.51E-07	2.78E-07	2.78E-07	9.70E-05
3263	483600	3623200	Residential	100m grid	4.92E-08	9.89E-08	8.77E-09	6.54E-08	1.17E-07	1.04E-07	5.25E-09	6.78E-08	1.48E-07	9.87E-08	4.57E-09	6.52E-08	1.57E-07	2.26E-07	2.51E-07	2.51E-07	8.76E-05
3264	479300	3623300	Residential	100m grid	2.50E-08	2.45E-08	1.94E-09	1.64E-08	2.60E-08	2.29E-08	1.16E-09	1.50E-08	3.28E-08	2.18E-08	1.01E-09	1.44E-08	5.14E-08	5.01E-08	5.56E-08	5.56E-08	1.94E-05
3265	479400	3623300	Residential	100m grid	2.75E-08	2.69E-08	2.13E-09	1.80E-08	2.85E-08	2.51E-08	1.27E-09	1.65E-08	3.60E-08	2.39E-08	1.11E-09	1.58E-08	5.65E-08	5.49E-08	6.10E-08	6.10E-08	2.13E-05
3266	479500	3623300	Residential	100m grid	3.35E-08	3.27E-08	2.59E-09	2.19E-08	3.46E-08	3.06E-08	1.55E-09	2.00E-08	4.37E-08	2.91E-08	1.35E-09	1.92E-08	6.88E-08	6.67E-08	7.42E-08	7.42E-08	2.58E-05
3267	479600	3623300	Residential	100m grid	3.70E-08	3.64E-08	2.88E-09	2.43E-08	3.85E-08	3.40E-08	1.72E-09	2.22E-08	4.86E-08	3.24E-08	1.50E-09	2.14E-08	7.62E-08	7.42E-08	8.25E-08	8.25E-08	2.87E-05
3268	479700	3623300	Residential	100m grid	4.00E-08	3.88E-08	3.06E-09	2.59E-08	4.10E-08	3.62E-08	1.83E-09	2.37E-08	5.18E-08	3.45E-08	1.60E-09	2.28E-08	8.19E-08	7.90E-08	8.78E-08	8.78E-08	3.06E-05
3269	479800	3623300	Residential	100m grid	4.29E-08	4.14E-08	3.26E-09	2.76E-08	4.36E-08	3.85E-08	1.95E-09	2.52E-08	5.51E-08	3.67E-08	1.70E-09	2.42E-08	8.75E-08	8.41E-08	9.34E-08	9.34E-08	3.25E-05
3270	479900	3623300	Residential	100m grid	4.96E-08	4.97E-08	3.95E-09	3.32E-08	5.29E-08	4.67E-08	2.37E-09	3.06E-08	6.68E-08	4.45E-08	2.06E-09	2.94E-08	1.03E-07	1.02E-07	1.13E-07	1.13E-07	3.95E-05
3271	480000	3623300	Residential	100m grid	5.42E-08	5.23E-08	4.12E-09	3.49E-08	5.51E-08	4.87E-08	2.47E-09	3.19E-08	6.96E-08	4.63E-08	2.15E-09	3.06E-08	1.11E-07	1.06E-07	1.18E-07	1.18E-07	4.11E-05
3272	480100	3623300	Residential	100m grid	6.09E-08	5.88E-08	4.63E-09	3.93E-08	6.20E-08	5.48E-08	2.77E-09	3.58E-08	7.83E-08	5.21E-08	2.41E-09	3.45E-08	1.24E-07	1.20E-07	1.33E-07	1.33E-07	4.63E-05
3273	480200	3623300	Residential	100m grid	7.05E-08	6.85E-08	5.40E-09	4.57E-08	7.23E-08	6.38E-08	3.23E-09	4.18E-08	9.13E-08	6.07E-08	2.81E-09	4.02E-08	1.44E-07	1.39E-07	1.55E-07	1.55E-07	5.39E-05
3274	480300	3623300	Residential	100m grid	8.41E-08	8.28E-08	6.55E-09	5.53E-08	8.77E-08	7.74E-08	3.92E-09	5.07E-08	1.11E-07	7.37E-08	3.41E-09	4.87E-08	1.73E-07	1.69E-07	1.88E-07	1.88E-07	6.54E-05
3284	482300	3623300	Residential	100m grid	1.78E-07	6.52E-07	6.05E-08	4.29E-07	8.10E-07	7.15E-07	3.62E-08	4.68E-07	1.02E-06	6.81E-07	3.15E-08	4.50E-07	8.90E-07	1.56E-06	1.74E-06	1.74E-06	6.04E-04
3285	482400	3623300	Residential	100m grid	1.49E-07	5.02E-07	4.64E-08	3.30E-07	6.21E-07	5.48E-07	2.78E-08	3.59E-07	7.84E-07	5.22E-07	2.42E-08	3.45E-07	6.97E-07	1.20E-06	1.33E-06	1.33E-06	4.63E-04
3286	482500	3623300	Residential	100m grid	1.26E-07	3.95E-07	3.63E-08	2.60E-07	4.86E-07	4.29E-07	2.17E-08	2.81E-07	6.14E-07	4.09E-07	1.89E-08	2.70E-07	5.58E-07	9.37E-07	1.04E-06	1.04E-06	3.63E-04
3287	482600	3623300	Residential	100m grid	1.10E-07	3.22E-07	2.94E-08	2.12E-07	3.94E-07	3.48E-07	1.76E-08	2.28E-07	4.97E-07	3.31E-07	1.53E-08	2.19E-07	4.61E-07	7.59E-07	8.44E-07	8.44E-07	2.94E-04
3288	482700	3623300	Residential	100m grid	9.73E-08	2.66E-07	2.42E-08	1.75E-07	3.24E-07	2.86E-07	1.45E-08	1.87E-07	4.09E-07	2.72E-07	1.26E-08	1.80E-07	3.87E-07	6.24E-07	6.93E-07	6.93E-07	2.42E-04
3289	482800	3623300	Residential	100m grid	8.94E-08	2.29E-07	2.08E-08	1.51E-07	2.78E-07	2.46E-07	1.24E-08	1.61E-07	3.52E-07	2.34E-07	1.08E-08	1.55E-07	3.40E-07	5.37E-07	5.96E-07	5.96E-07	2.08E-04
3290	482900	3623300	Residential	100m grid	8.17E-08	1.98E-07	1.79E-08	1.31E-07	2.40E-07	2.11E-07	1.07E-08	1.38E-07	3.02E-07	2.01E-07	9.32E-09	1.33E-07	2.98E-07	4.62E-07	5.13E-07	5.13E-07	1.79E-04
3291	483000	3623300	Residential	100m grid	7.18E-08	1.66E-07	1.49E-08	1.09E-07	2.00E-07	1.76E-07	8.92E-09	1.15E-07	2.52E-07	1.68E-07	7.76E-09	1.11E-07	2.53E-07	3.85E-07	4.27E-07	4.27E-07	1.49E-04
3292	483100	3623300	Residential	100m grid	6.47E-08	1.43E-07	1.28E-08	9.43E-08	1.71E-07	1.51E-07	7.65E-09	9.88E-08	2.16E-07	1.44E-07	6.66E-09	9.51E-08	2.20E-07	3.30E-07	3.67E-07	3.67E-07	1.28E-04
3293	483200	3623300	Residential	100m grid	6.00E-08	1.27E-07	1.14E-08	8.42E-08	1.52E-07	1.34E-07	6.80E-09	8.79E-08	1.92E-07	1.28E-07	5.92E-09	8.45E-08	1.99E-07	2.93E-07	3.26E-07	3.26E-07	1.14E-04
3294	483300	3623300	Residential	100m grid	5.63E-08	1.16E-07	1.03E-08	7.66E-08	1.38E-07	1.22E-07	6.17E-09	7.97E-08	1.74E-07	1.16E-07	5.37E-09	7.66E-08	1.83E-07	2.66E-07	2.95E-07	2.95E-07	1.03E-04
3295	483400	3623300	Residential	100m grid	5.35E-08	1.07E-07	9.49E-09	7.08E-08	1.27E-07	1.12E-07	5.68E-09	7.34E-08	1.60E-07	1.07E-07	4.95E-09	7.06E-08	1.70E-07	2.45E-07	2.72E-07	2.72E-07	9.48E-05
3296	483500	3623300	Residential	100m grid	4.95E-08	9.65E-08	8.53E-09	6.38E-08	1.14E-07	1.01E-07	5.10E-09	6.60E-08	1.44E-07	9.60E-08	4.44E-09	6.34E-08	1.55E-07	2.20E-07	2.45E-07	2.45E-07	8.52E-05
3297	483600	3623300	Residential	100m grid	4.45E-08	8.47E-08	7.46E-09	5.60E-08	1.00E-07	8.82E-08	4.47E-09	5.77E-08	1.26E-07	8.40E-08	3.89E-09	5.55E-08	1.37E-07	1.93E-07	2.14E-07	2.14E-07	7.46E-05
3298	479300	3623400	Residential	100m grid	2.66E-08	2.64E-08	2.09E-09	1.76E-08	2.80E-08	2.47E-08	1.25E-09	1.62E-08	3.54E-08	2.35E-08	1.09E-09	1.56E-08	5.51E-08	5.40E-08	6.00E-08	6.00E-08	2.09E-05
3299	479400	3623400	Residential	100m grid	2.95E-08	2.92E-08	2.31E-09	1.95E-08	3.09E-08	2.73E-08	1.38E-09	1.79E-08	3.90E-08	2.60E-08	1.20E-09	1.72E-08	6.10E-08	5.96E-08	6.62E-08	6.62E-08	2.31E-05
3300	479500	3623400	Residential	100m grid	3.43E-08	3.36E-08	2.65E-09	2.24E-08	3.56E-08	3.14E-08	1.59E-09	2.05E-08	4.49E-08	2.99E-08	1.38E-09	1.97E-08	7.06E-08	6.85E-08	7.61E-08	7.61E-08	2.65E-05
3301	479600	3623400	Residential	100m grid	3.97E-08	3.86E-08	3.05E-09	2.58E-08	4.08E-08	3.60E-08	1.82E-09	2.36E-08	5.15E-08	3.43E-08	1.59E-09	2.27E-08	8.14E-08	7.87E-08	8.74E-08	8.74E-08	3.04E-05
3302	479700	3623400	Residential	100m grid	4.37E-08	4.38E-08	3.48E-09	2.92E-08	4.66E-08	4.11E-08	2.08E-09	2.69E-08	5.88E-08	3.91E-08	1.81E-09	2.59E-08	9.10E-08	8.97E-08	9.97E-08	9.97E-08	3.47E-05
3303	479800	3623400	Residential	100m grid	4.87E-08	4.72E-08	3.73E-09	3.16E-08	4.99E-08	4.40E-08	2.23E-09	2.88E-08	6.30E-08	4.19E-08	1.94E-09	2.77E-08	9.96E-08	9.61E-08	1.07E-07	1.07E-07	3.72E-05
3304	479900	3623400	Residential	100m grid	5.37E-08	5.35E-08	4.24E-09	3.57E-08	5.68E-08	5.02E-08	2.54E-09	3.28E-08	7.18E-08	4.78E-08	2.21E-09	3.16E-08	1.11E-07	1.10E-07	1.22E-07	1.22E-07	4.24E-05
3305	480000	3623400	Residential	100m grid	6.01E-08	5.99E-08	4.75E-09	4.00E-08	6.36E-08	5.62E-08	2.84E-09	3.68E-08	8.03E-08	5.35E-08	2.48E-09	3.53E-08	1.25E-07	1.23E-07	1.36E-07	1.36E-07	4.75E-05
3306	480100	3623400	Residential	100m grid	6.59E-08	6.38E-08	5.03E-09	4.26E-08	6.73E-08	5.94E-08	3.01E-09	3.89E-08	8.50E-08	5.66E-08	2.62E-09	3.74E-08	1.35E-07	1.30E-07	1.44E-07	1.44E-07	5.02E-05
3307	480200	3623400	Residential	100m grid	7.62E-08	7.42E-08	5.85E-09	4.95E-08	7.83E-08	6.91E-08	3.50E-09	4.52E-08	9.89E-08	6.58E-08	3.05E-09	4.35E-08	1.56E-07	1.51E-07	1.68E-07	1.68E-07	5.84E-05
3308	480300	3623400	Residential	100m grid	8.80E-08	8.87E-08	7.06E-09	5.92E-08	9.45E-08	8.34E-08	4.22E-09	5.46E-08	1.19E-07	7.94E-08	3.68E-09	5.25E-08	1.84E-07	1.82E-07	2.02E-07	2.02E-07	7.05E-05
3309	480400	3623400	Residential	100m grid	1.03E-07	1.06E-07	8.51E-09	7.10E-08	1.14E-07	1.01E-07	5.09E-09	6.58E-08	1.44E-07	9.57E-08	4.43E-09	6.33E-08	2.18E-07	2.20E-07	2.44E-07	2.44E-07	8.50E-05
3317	482200	3623400	Residential	100m grid	1.80E-07	6.71E-07	6.23E-08	4.41E-07	8.34E-07	7.36E-07	3.73E-08	4.82E-07	1.05E-06	7.01E-07	3.25E-08	4.64E-07	9.13E-07	1.61E-06	1.79E-06	1.79E-06	6.22E-04
3318	482300	3623400	Residential	100m grid	1.53E-07	5.05E-07	4.65E-08	3.32E-07	6.23E-07	5.50E-07	2.79E-08	3.60E-07	7.87E-07	5.24E-07	2.42E-08	3.46E-07	7.04E-07	1.20E-06	1.33E-06	1.33E-06	4.65E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3319	482400	3623400	Residential	100m grid	1.29E-07	3.85E-07	3.53E-08	2.54E-07	4.72E-07	4.17E-07	2.11E-08	2.73E-07	5.96E-07	3.97E-07	1.84E-08	2.62E-07	5.49E-07	9.10E-07	1.01E-06	1.01E-06	3.52E-04
3320	482500	3623400	Residential	100m grid	1.10E-07	3.00E-07	2.73E-08	1.98E-07	3.65E-07	3.23E-07	1.63E-08	2.11E-07	4.61E-07	3.07E-07	1.42E-08	2.03E-07	4.37E-07	7.04E-07	7.83E-07	7.83E-07	2.73E-04
3321	482600	3623400	Residential	100m grid	9.96E-08	2.53E-07	2.30E-08	1.67E-07	3.07E-07	2.71E-07	1.37E-08	1.78E-07	3.88E-07	2.58E-07	1.20E-08	1.71E-07	3.76E-07	5.92E-07	6.58E-07	6.58E-07	2.29E-04
3322	482700	3623400	Residential	100m grid	8.67E-08	2.07E-07	1.86E-08	1.36E-07	2.49E-07	2.20E-07	1.11E-08	1.44E-07	3.15E-07	2.10E-07	9.70E-09	1.39E-07	3.12E-07	4.81E-07	5.34E-07	5.34E-07	1.86E-04
3323	482800	3623400	Residential	100m grid	7.81E-08	1.77E-07	1.59E-08	1.17E-07	2.12E-07	1.87E-07	9.49E-09	1.23E-07	2.68E-07	1.78E-07	8.26E-09	1.18E-07	2.71E-07	4.09E-07	4.55E-07	4.55E-07	1.58E-04
3324	482900	3623400	Residential	100m grid	7.21E-08	1.57E-07	1.40E-08	1.03E-07	1.87E-07	1.65E-07	8.37E-09	1.08E-07	2.36E-07	1.57E-07	7.28E-09	1.04E-07	2.43E-07	3.61E-07	4.01E-07	4.01E-07	1.40E-04
3325	483000	3623400	Residential	100m grid	6.65E-08	1.39E-07	1.24E-08	9.18E-08	1.66E-07	1.46E-07	7.40E-09	9.56E-08	2.09E-07	1.39E-07	6.44E-09	9.20E-08	2.18E-07	3.19E-07	3.55E-07	3.55E-07	1.24E-04
3326	483100	3623400	Residential	100m grid	5.92E-08	1.19E-07	1.06E-08	7.87E-08	1.41E-07	1.25E-07	6.32E-09	8.16E-08	1.78E-07	1.19E-07	5.50E-09	7.85E-08	1.89E-07	2.72E-07	3.03E-07	3.03E-07	1.05E-04
3327	483200	3623400	Residential	100m grid	5.45E-08	1.06E-07	9.40E-09	7.03E-08	1.26E-07	1.11E-07	5.63E-09	7.27E-08	1.59E-07	1.06E-07	4.90E-09	6.99E-08	1.70E-07	2.43E-07	2.70E-07	2.70E-07	9.39E-05
3328	483300	3623400	Residential	100m grid	5.07E-08	9.64E-08	8.49E-09	6.37E-08	1.14E-07	1.00E-07	5.08E-09	6.57E-08	1.44E-07	9.55E-08	4.42E-09	6.32E-08	1.56E-07	2.19E-07	2.43E-07	2.43E-07	8.48E-05
3329	483400	3623400	Residential	100m grid	4.72E-08	8.77E-08	7.71E-09	5.80E-08	1.03E-07	9.11E-08	4.62E-09	5.96E-08	1.30E-07	8.68E-08	4.02E-09	5.74E-08	1.43E-07	1.99E-07	2.21E-07	2.21E-07	7.70E-05
3330	483500	3623400	Residential	100m grid	4.49E-08	8.19E-08	7.18E-09	5.42E-08	9.62E-08	8.49E-08	4.30E-09	5.56E-08	1.21E-07	8.08E-08	3.74E-09	5.34E-08	1.34E-07	1.85E-07	2.06E-07	2.06E-07	7.18E-05
3331	483600	3623400	Residential	100m grid	4.24E-08	7.59E-08	6.65E-09	5.02E-08	8.90E-08	7.86E-08	3.98E-09	5.14E-08	1.12E-07	7.48E-08	3.46E-09	4.95E-08	1.25E-07	1.72E-07	1.91E-07	1.91E-07	6.64E-05
3332	479300	3623500	Residential	100m grid	2.57E-08	2.74E-08	2.21E-09	1.83E-08	2.96E-08	2.61E-08	1.32E-09	1.71E-08	3.74E-08	2.49E-08	1.15E-09	1.64E-08	5.53E-08	5.70E-08	6.34E-08	6.34E-08	2.21E-05
3333	479400	3623500	Residential	100m grid	3.05E-08	3.21E-08	2.58E-09	2.14E-08	3.45E-08	3.05E-08	1.54E-09	2.00E-08	4.36E-08	2.90E-08	1.34E-09	1.92E-08	6.52E-08	6.66E-08	7.40E-08	7.40E-08	2.58E-05
3334	479500	3623500	Residential	100m grid	3.61E-08	3.75E-08	3.01E-09	2.50E-08	4.03E-08	3.55E-08	1.80E-09	2.33E-08	5.08E-08	3.38E-08	1.57E-09	2.24E-08	7.67E-08	7.76E-08	8.62E-08	8.62E-08	3.00E-05
3335	479600	3623500	Residential	100m grid	4.10E-08	4.24E-08	3.40E-09	2.83E-08	4.55E-08	4.01E-08	2.03E-09	2.63E-08	5.74E-08	3.82E-08	1.77E-09	2.53E-08	8.68E-08	8.76E-08	9.74E-08	9.74E-08	3.39E-05
3336	479700	3623500	Residential	100m grid	4.45E-08	4.67E-08	3.75E-09	3.12E-08	5.03E-08	4.44E-08	2.25E-09	2.90E-08	6.34E-08	4.22E-08	1.96E-09	2.79E-08	9.50E-08	9.68E-08	1.08E-07	1.08E-07	3.75E-05
3337	479800	3623500	Residential	100m grid	4.88E-08	5.13E-08	4.12E-09	3.42E-08	5.52E-08	4.87E-08	2.47E-09	3.19E-08	6.97E-08	4.64E-08	2.15E-09	3.07E-08	1.04E-07	1.06E-07	1.18E-07	1.18E-07	4.12E-05
3338	479900	3623500	Residential	100m grid	5.37E-08	5.68E-08	4.57E-09	3.79E-08	6.12E-08	5.40E-08	2.73E-09	3.53E-08	7.72E-08	5.14E-08	2.38E-09	3.40E-08	1.15E-07	1.18E-07	1.31E-07	1.31E-07	4.56E-05
3340	480100	3623500	Residential	100m grid	6.61E-08	7.01E-08	5.64E-09	4.68E-08	7.56E-08	6.67E-08	3.38E-09	4.37E-08	9.54E-08	6.35E-08	2.94E-09	4.20E-08	1.42E-07	1.46E-07	1.62E-07	1.62E-07	5.64E-05
3341	480200	3623500	Residential	100m grid	7.27E-08	7.82E-08	6.31E-09	5.21E-08	8.45E-08	7.46E-08	3.78E-09	4.88E-08	1.07E-07	7.10E-08	3.29E-09	4.69E-08	1.57E-07	1.63E-07	1.81E-07	1.81E-07	6.30E-05
3342	480300	3623500	Residential	100m grid	8.16E-08	9.24E-08	7.53E-09	6.15E-08	1.01E-07	8.90E-08	4.51E-09	5.83E-08	1.27E-07	8.48E-08	3.92E-09	5.60E-08	1.81E-07	1.94E-07	2.16E-07	2.16E-07	7.52E-05
3343	480400	3623500	Residential	100m grid	9.22E-08	1.09E-07	8.94E-09	7.24E-08	1.20E-07	1.06E-07	5.35E-09	6.92E-08	1.51E-07	1.01E-07	4.66E-09	6.65E-08	2.10E-07	2.31E-07	2.56E-07	2.56E-07	8.93E-05
3344	480500	3623500	Residential	100m grid	1.04E-07	1.31E-07	1.09E-08	8.68E-08	1.45E-07	1.28E-07	6.50E-09	8.40E-08	1.84E-07	1.22E-07	5.66E-09	8.08E-08	2.46E-07	2.80E-07	3.11E-07	3.11E-07	1.08E-04
3350	482100	3623500	Residential	100m grid	2.43E-07	8.67E-07	8.03E-08	5.70E-07	1.07E-06	9.49E-07	4.81E-08	6.21E-07	1.36E-06	9.03E-07	4.18E-08	5.97E-07	1.19E-06	2.07E-06	2.30E-06	2.30E-06	8.02E-04
3351	482200	3623500	Residential	100m grid	1.79E-07	5.64E-07	5.19E-08	3.71E-07	6.95E-07	6.13E-07	3.11E-08	4.01E-07	8.77E-07	5.84E-07	2.70E-08	3.86E-07	7.95E-07	1.34E-06	1.49E-06	1.49E-06	5.18E-04
3352	482300	3623500	Residential	100m grid	1.40E-07	3.92E-07	3.58E-08	2.58E-07	4.79E-07	4.23E-07	2.14E-08	2.77E-07	6.05E-07	4.03E-07	1.87E-08	2.66E-07	5.68E-07	9.24E-07	1.03E-06	1.03E-06	3.58E-04
3353	482400	3623500	Residential	100m grid	1.18E-07	2.95E-07	2.67E-08	1.94E-07	3.57E-07	3.15E-07	1.60E-08	2.06E-07	4.51E-07	3.00E-07	1.39E-08	1.98E-07	4.39E-07	6.88E-07	7.64E-07	7.64E-07	2.66E-04
3354	482500	3623500	Residential	100m grid	1.04E-07	2.38E-07	2.14E-08	1.57E-07	2.86E-07	2.53E-07	1.28E-08	1.65E-07	3.62E-07	2.41E-07	1.11E-08	1.59E-07	3.63E-07	5.52E-07	6.13E-07	6.13E-07	2.14E-04
3355	482600	3623500	Residential	100m grid	9.23E-08	1.99E-07	1.78E-08	1.31E-07	2.38E-07	2.10E-07	1.06E-08	1.37E-07	3.00E-07	2.00E-07	9.26E-09	1.32E-07	3.09E-07	4.59E-07	5.10E-07	5.10E-07	1.77E-04
3356	482700	3623500	Residential	100m grid	8.26E-08	1.70E-07	1.51E-08	1.12E-07	2.02E-07	1.78E-07	9.02E-09	1.17E-07	2.55E-07	1.70E-07	7.85E-09	1.12E-07	2.67E-07	3.89E-07	4.32E-07	4.32E-07	1.50E-04
3357	482800	3623500	Residential	100m grid	7.39E-08	1.46E-07	1.29E-08	9.63E-08	1.73E-07	1.52E-07	7.72E-09	9.97E-08	2.18E-07	1.45E-07	6.72E-09	9.59E-08	2.32E-07	3.33E-07	3.70E-07	3.70E-07	1.29E-04
3358	482900	3623500	Residential	100m grid	6.75E-08	1.29E-07	1.14E-08	8.56E-08	1.53E-07	1.35E-07	6.83E-09	8.83E-08	1.93E-07	1.28E-07	5.95E-09	8.49E-08	2.08E-07	2.95E-07	3.27E-07	3.27E-07	1.14E-04
3359	483000	3623500	Residential	100m grid	6.15E-08	1.15E-07	1.01E-08	7.60E-08	1.35E-07	1.19E-07	6.05E-09	7.82E-08	1.71E-07	1.14E-07	5.27E-09	7.52E-08	1.87E-07	2.61E-07	2.90E-07	2.90E-07	1.01E-04
3360	483100	3623500	Residential	100m grid	5.81E-08	1.07E-07	9.35E-09	7.05E-08	1.25E-07	1.11E-07	5.60E-09	7.23E-08	1.58E-07	1.05E-07	4.87E-09	6.96E-08	1.74E-07	2.41E-07	2.68E-07	2.68E-07	9.34E-05
3361	483200	3623500	Residential	100m grid	5.20E-08	9.33E-08	8.17E-09	6.17E-08	1.09E-07	9.66E-08	4.89E-09	6.32E-08	1.38E-07	9.19E-08	4.26E-09	6.08E-08	1.53E-07	2.11E-07	2.34E-07	2.34E-07	8.16E-05
3362	483300	3623500	Residential	100m grid	4.81E-08	8.48E-08	7.41E-09	5.61E-08	9.92E-08	8.76E-08	4.44E-09	5.73E-08	1.25E-07	8.34E-08	3.86E-09	5.51E-08	1.40E-07	1.91E-07	2.13E-07	2.13E-07	7.40E-05
3363	483400	3623500	Residential	100m grid	4.48E-08	7.78E-08	6.78E-09	5.15E-08	9.08E-08	8.02E-08	4.06E-09	5.25E-08	1.15E-07	7.63E-08	3.53E-09	5.05E-08	1.29E-07	1.75E-07	1.95E-07	1.95E-07	6.78E-05
3364	483500	3623500	Residential	100m grid	4.20E-08	7.19E-08	6.26E-09	4.76E-08	8.39E-08	7.40E-08	3.75E-09	4.84E-08	1.06E-07	7.05E-08	3.26E-09	4.66E-08	1.20E-07	1.62E-07	1.80E-07	1.80E-07	6.25E-05
3365	483600	3623500	Residential	100m grid	3.95E-08	6.67E-08	5.79E-09	4.41E-08	7.76E-08	6.85E-08	3.47E-09	4.48E-08	9.80E-08	6.52E-08	3.02E-09	4.31E-08	1.12E-07	1.50E-07	1.66E-07	1.66E-07	5.79E-05
3366	479300	3623600	Residential	100m grid	2.56E-08	2.94E-08	2.40E-09	1.96E-08	3.22E-08	2.84E-08	1.44E-09	1.86E-08	4.06E-08	2.70E-08	1.25E-09	1.79E-08	5.74E-08	6.20E-08	6.89E-08	6.89E-08	2.40E-05
3367	479400	3623600	Residential	100m grid	2.81E-08	3.22E-08	2.63E-09	2.15E-08	3.53E-08	3.11E-08	1.58E-09	2.04E-08	4.45E-08	2.96E-08	1.37E-09	1.96E-08	6.30E-08	6.80E-08	7.55E-08	7.55E-08	2.63E-05
3368	479500	3623600	Residential	100m grid	3.17E-08	3.62E-08	2.96E-09	2.41E-08	3.96E-08	3.49E-08	1.77E-09	2.29E-08	5.00E-08	3.33E-08	1.54E-09	2.20E-08	7.09E-08	7.63E-08	8.48E-08	8.48E-08	2.95E-05
3369	479600	3623600	Residential	100m grid	3.92E-08	4.42E-08	3.60E-09	2.94E-08	4.82E-08	4.25E-08	2.16E-09	2.78E-08	6.09E-08	4.05E-08	1.88E-09	2.68E-08	8.70E-08	9.29E-08	1.03E-07	1.03E-07	3.60E-05
3370	479700	3623600	Residential	100m grid	4.27E-08	4.88E-08	3.98E-09	3.25E-08	5.33E-08	4.71E-08	2.38E-09	3.08E-08	6.74E-08	4.48E-08	2.08E-09	2.96E-08	9.55E-08	1.03E-07	1.14E-07	1.14E-07	3.98E-05
3375	480200	3623600	Residential	100m grid	6.33E-08	8.14E-08	6.79E-09	5.41E-08	9.10E-08	8.03E-08	4.07E-09	5.25E-08	1.15E-07	7.64E-08	3.54E-09	5.05E-08	1.51E-07	1.75E-07	1.95E-07	1.95E-07	6.78E-05
3376	480300	3623600	Residential	100m grid	6.87E-08	9.26E-08	7.79E-09	6.15E-08	1.04E-07	9.20E-08	4.66E-09	6.02E-08	1.32E-07	8.76E-08	4.06E-09	5.79E-08	1.69E-07	2.01E-07	2.23E-07	2.23E-07	7.78E-05
3383	482100	3623600	Residential	100m grid	1.96E-07	5.66E-07	5.17E-08	3.73E-07	6.93E-07	6.12E-07	3.10E-08	4.00E-07	8.75E-07	5.82E-07	2.70E-08	3.85E-07	8.14E-07	1.34E-06	1.48E-06	1.48E-06	5.17E-04
3384	482200	3623600	Residential	100m grid	1.52E-07	4.10E-07	3.73E-08	2.70E-07	5.00E-07	4.41E-07	2.23E-08	2.89E-07	6.31E-07	4.20E-07	1.94E-08	2.78E-07	6.00E-07	9.63E-07	1.07E-06	1.07E-06	3.73E-04
3385	482300	3623600	Residential	100m grid	1.26E-07	3.08E-07	2.78E-08	2.03E-07	3.73E-07	3.29E-07	1.67E-08	2.15E-07	4.70E-07	3.13E-07	1.45E-08	2.07E-07	4.62E-07	7.18E-07	7.98E-07	7.98E-07	2.78E-04
3386	482400	3623600	Residential	100m grid	1.09E-07	2.45E-07	2.19E-08	1.62E-07	2.94E-07	2.59E-07	1.31E-08	1.70E-07	3.71E-07	2.47E-07	1.14E-08	1.63E-07	3.76E-07	5.66E-07	6.29E-07	6.29E-07	2.19E-04
3387	482500	3623600	Residential	100m grid	9.68E-08	2.01E-07	1.79E-08	1.33E-07	2.40E-07	2.12E-07	1.07E-08	1.39E-07	3.03E-07	2.02E-07	9.34E-09	1.33E-07	3.16E-07	4.62E-07	5.14E-07	5.14E-07	1.79E-04
3388	482600	3623600	Residential	100m grid	8.70E-08	1.70E-07	1.50E-08	1.12E-07	2.01E-07	1.77E-07	8.98E-09	1.16E-07	2.54E-07	1.69E-07	7.82E-09	1.12E-07	2.72E-07	3.87E-07	4.30E-07	4.30E-07	1.50E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3389	482700	3623600	Residential	100m grid	7.98E-08	1.48E-07	1.30E-08	9.79E-08	1.74E-07	1.54E-07	7.79E-09	1.01E-07	2.20E-07	1.46E-07	6.78E-09	9.68E-08	2.41E-07	3.36E-07	3.73E-07	3.73E-07	1.30E-04
3390	482800	3623600	Residential	100m grid	7.18E-08	1.28E-07	1.12E-08	8.47E-08	1.50E-07	1.32E-07	6.70E-09	8.66E-08	1.89E-07	1.26E-07	5.84E-09	8.33E-08	2.11E-07	2.89E-07	3.21E-07	3.21E-07	1.12E-04
3391	482900	3623600	Residential	100m grid	6.56E-08	1.14E-07	9.89E-09	7.51E-08	1.32E-07	1.17E-07	5.92E-09	7.65E-08	1.67E-07	1.11E-07	5.15E-09	7.36E-08	1.89E-07	2.55E-07	2.84E-07	2.84E-07	9.88E-05
3392	483000	3623600	Residential	100m grid	6.01E-08	1.02E-07	8.84E-09	6.73E-08	1.18E-07	1.05E-07	5.29E-09	6.84E-08	1.50E-07	9.95E-08	4.61E-09	6.58E-08	1.71E-07	2.28E-07	2.54E-07	2.54E-07	8.83E-05
3393	483100	3623600	Residential	100m grid	5.57E-08	9.28E-08	8.05E-09	6.14E-08	1.08E-07	9.51E-08	4.82E-09	6.23E-08	1.36E-07	9.06E-08	4.19E-09	5.99E-08	1.57E-07	2.08E-07	2.31E-07	2.31E-07	8.04E-05
3394	483200	3623600	Residential	100m grid	5.23E-08	8.59E-08	7.44E-09	5.69E-08	9.96E-08	8.79E-08	4.45E-09	5.75E-08	1.26E-07	8.37E-08	3.88E-09	5.53E-08	1.46E-07	1.92E-07	2.13E-07	2.13E-07	7.43E-05
3395	483300	3623600	Residential	100m grid	4.79E-08	7.80E-08	6.74E-09	5.16E-08	9.03E-08	7.97E-08	4.04E-09	5.21E-08	1.14E-07	7.59E-08	3.51E-09	5.02E-08	1.33E-07	1.74E-07	1.93E-07	1.93E-07	6.74E-05
3396	483400	3623600	Residential	100m grid	4.41E-08	7.11E-08	6.14E-09	4.71E-08	8.22E-08	7.26E-08	3.68E-09	4.75E-08	1.04E-07	6.91E-08	3.20E-09	4.57E-08	1.21E-07	1.58E-07	1.76E-07	1.76E-07	6.13E-05
3397	483500	3623600	Residential	100m grid	4.11E-08	6.57E-08	5.66E-09	4.35E-08	7.58E-08	6.69E-08	3.39E-09	4.38E-08	9.57E-08	6.37E-08	2.95E-09	4.21E-08	1.12E-07	1.46E-07	1.62E-07	1.62E-07	5.66E-05
3398	483600	3623600	Residential	100m grid	3.87E-08	6.12E-08	5.27E-09	4.05E-08	7.06E-08	6.23E-08	3.16E-09	4.08E-08	8.91E-08	5.93E-08	2.75E-09	3.92E-08	1.05E-07	1.36E-07	1.51E-07	1.51E-07	5.27E-05
3399	479300	3623700	Residential	100m grid	2.56E-08	3.07E-08	2.53E-09	2.04E-08	3.39E-08	2.99E-08	1.51E-09	1.96E-08	4.28E-08	2.85E-08	1.32E-09	1.88E-08	5.88E-08	6.53E-08	7.25E-08	7.25E-08	2.53E-05
3400	479400	3623700	Residential	100m grid	2.78E-08	3.33E-08	2.74E-09	2.21E-08	3.67E-08	3.24E-08	1.64E-09	2.12E-08	4.63E-08	3.08E-08	1.43E-09	2.04E-08	6.38E-08	7.07E-08	7.86E-08	7.86E-08	2.74E-05
3401	479500	3623700	Residential	100m grid	3.11E-08	3.73E-08	3.08E-09	2.48E-08	4.12E-08	3.64E-08	1.84E-09	2.38E-08	5.20E-08	3.46E-08	1.60E-09	2.29E-08	7.15E-08	7.94E-08	8.82E-08	8.82E-08	3.07E-05
3402	479600	3623700	Residential	100m grid	3.68E-08	4.55E-08	3.77E-09	3.03E-08	5.05E-08	4.46E-08	2.26E-09	2.92E-08	6.38E-08	4.24E-08	1.97E-09	2.81E-08	8.61E-08	9.74E-08	1.08E-07	1.08E-07	3.77E-05
3415	482000	3623700	Residential	100m grid	3.06E-07	6.93E-07	6.21E-08	4.57E-07	8.31E-07	7.34E-07	3.72E-08	4.80E-07	1.05E-06	6.99E-07	3.24E-08	4.62E-07	1.06E-06	1.60E-06	1.78E-06	1.78E-06	6.20E-04
3416	482100	3623700	Residential	100m grid	1.88E-07	4.26E-07	3.82E-08	2.81E-07	5.11E-07	4.51E-07	2.28E-08	2.95E-07	6.45E-07	4.29E-07	1.99E-08	2.84E-07	6.51E-07	9.85E-07	1.09E-06	1.09E-06	3.81E-04
3417	482200	3623700	Residential	100m grid	1.49E-07	3.37E-07	3.02E-08	2.23E-07	4.05E-07	3.57E-07	1.81E-08	2.34E-07	5.11E-07	3.40E-07	1.58E-08	2.25E-07	5.17E-07	7.80E-07	8.67E-07	8.67E-07	3.02E-04
3418	482300	3623700	Residential	100m grid	1.21E-07	2.67E-07	2.38E-08	1.76E-07	3.19E-07	2.82E-07	1.43E-08	1.84E-07	4.03E-07	2.68E-07	1.24E-08	1.77E-07	4.11E-07	6.15E-07	6.84E-07	6.84E-07	2.38E-04
3419	482400	3623700	Residential	100m grid	1.03E-07	2.17E-07	1.93E-08	1.43E-07	2.59E-07	2.29E-07	1.16E-08	1.50E-07	3.27E-07	2.18E-07	1.01E-08	1.44E-07	3.39E-07	4.99E-07	5.55E-07	5.55E-07	1.93E-04
3420	482500	3623700	Residential	100m grid	9.01E-08	1.81E-07	1.60E-08	1.19E-07	2.14E-07	1.89E-07	9.58E-09	1.24E-07	2.70E-07	1.80E-07	8.33E-09	1.19E-07	2.87E-07	4.13E-07	4.59E-07	4.59E-07	1.60E-04
3421	482600	3623700	Residential	100m grid	8.09E-08	1.54E-07	1.35E-08	1.02E-07	1.81E-07	1.60E-07	8.10E-09	1.05E-07	2.29E-07	1.52E-07	7.05E-09	1.01E-07	2.48E-07	3.49E-07	3.88E-07	3.88E-07	1.35E-04
3422	482700	3623700	Residential	100m grid	7.40E-08	1.34E-07	1.17E-08	8.83E-08	1.57E-07	1.38E-07	7.00E-09	9.05E-08	1.98E-07	1.32E-07	6.10E-09	8.70E-08	2.19E-07	3.02E-07	3.36E-07	3.36E-07	1.17E-04
3423	482800	3623700	Residential	100m grid	6.80E-08	1.17E-07	1.02E-08	7.74E-08	1.36E-07	1.20E-07	6.10E-09	7.88E-08	1.72E-07	1.15E-07	5.31E-09	7.58E-08	1.95E-07	2.63E-07	2.92E-07	2.92E-07	1.02E-04
3424	482900	3623700	Residential	100m grid	6.27E-08	1.04E-07	9.00E-09	6.88E-08	1.21E-07	1.06E-07	5.39E-09	6.96E-08	1.52E-07	1.01E-07	4.69E-09	6.70E-08	1.76E-07	2.32E-07	2.58E-07	2.58E-07	8.99E-05
3425	483000	3623700	Residential	100m grid	5.82E-08	9.34E-08	8.06E-09	6.18E-08	1.08E-07	9.52E-08	4.82E-09	6.23E-08	1.36E-07	9.07E-08	4.20E-09	6.00E-08	1.60E-07	2.08E-07	2.31E-07	2.31E-07	8.05E-05
3426	483100	3623700	Residential	100m grid	5.43E-08	8.50E-08	7.32E-09	5.64E-08	9.80E-08	8.65E-08	4.38E-09	5.66E-08	1.24E-07	8.23E-08	3.81E-09	5.44E-08	1.47E-07	1.89E-07	2.10E-07	2.10E-07	7.31E-05
3427	483200	3623700	Residential	100m grid	5.04E-08	7.76E-08	6.66E-09	5.14E-08	8.92E-08	7.87E-08	3.99E-09	5.15E-08	1.13E-07	7.50E-08	3.47E-09	4.96E-08	1.35E-07	1.72E-07	1.91E-07	1.91E-07	6.65E-05
3428	483300	3623700	Residential	100m grid	4.69E-08	7.14E-08	6.12E-09	4.73E-08	8.19E-08	7.23E-08	3.66E-09	4.73E-08	1.03E-07	6.88E-08	3.19E-09	4.55E-08	1.24E-07	1.58E-07	1.75E-07	1.75E-07	6.11E-05
3429	483400	3623700	Residential	100m grid	4.38E-08	6.61E-08	5.66E-09	4.38E-08	7.57E-08	6.68E-08	3.39E-09	4.37E-08	9.56E-08	6.36E-08	2.95E-09	4.21E-08	1.15E-07	1.46E-07	1.62E-07	1.62E-07	5.65E-05
3430	483500	3623700	Residential	100m grid	4.10E-08	6.14E-08	5.25E-09	4.07E-08	7.03E-08	6.21E-08	3.14E-09	4.06E-08	8.88E-08	5.91E-08	2.74E-09	3.91E-08	1.08E-07	1.36E-07	1.51E-07	1.51E-07	5.25E-05
3431	483600	3623700	Residential	100m grid	3.84E-08	5.74E-08	4.90E-09	3.80E-08	6.56E-08	5.79E-08	2.93E-09	3.79E-08	8.29E-08	5.52E-08	2.55E-09	3.65E-08	1.01E-07	1.27E-07	1.41E-07	1.41E-07	4.90E-05
3432	479300	3623800	Residential	100m grid	2.91E-08	3.69E-08	3.08E-09	2.46E-08	4.12E-08	3.64E-08	1.84E-09	2.38E-08	5.20E-08	3.46E-08	1.60E-09	2.29E-08	6.91E-08	7.95E-08	8.83E-08	8.83E-08	3.08E-05
3433	479400	3623800	Residential	100m grid	2.82E-08	3.56E-08	2.96E-09	2.37E-08	3.97E-08	3.50E-08	1.77E-09	2.29E-08	5.01E-08	3.34E-08	1.54E-09	2.21E-08	6.68E-08	7.65E-08	8.50E-08	8.50E-08	2.96E-05
3434	479500	3623800	Residential	100m grid	3.11E-08	4.06E-08	3.40E-09	2.70E-08	4.56E-08	4.02E-08	2.04E-09	2.63E-08	5.75E-08	3.83E-08	1.77E-09	2.53E-08	7.52E-08	8.78E-08	9.76E-08	9.76E-08	3.40E-05
3448	481900	3623800	Residential	100m grid	4.40E-07	8.71E-07	7.70E-08	5.75E-07	1.03E-06	9.10E-07	4.61E-08	5.96E-07	1.30E-06	8.67E-07	4.01E-08	5.73E-07	1.39E-06	1.99E-06	2.21E-06	2.21E-06	7.70E-04
3449	482000	3623800	Residential	100m grid	2.64E-07	5.04E-07	4.44E-08	3.33E-07	5.95E-07	5.25E-07	2.66E-08	3.44E-07	7.51E-07	5.00E-07	2.31E-08	3.31E-07	8.12E-07	1.15E-06	1.27E-06	1.27E-06	4.44E-04
3450	482100	3623800	Residential	100m grid	1.96E-07	3.74E-07	3.29E-08	2.47E-07	4.41E-07	3.89E-07	1.97E-08	2.55E-07	5.57E-07	3.71E-07	1.72E-08	2.45E-07	6.03E-07	8.50E-07	9.44E-07	9.44E-07	3.29E-04
3451	482200	3623800	Residential	100m grid	1.59E-07	3.06E-07	2.70E-08	2.02E-07	3.61E-07	3.19E-07	1.61E-08	2.09E-07	4.56E-07	3.04E-07	1.41E-08	2.01E-07	4.92E-07	6.96E-07	7.74E-07	7.74E-07	2.69E-04
3452	482300	3623800	Residential	100m grid	1.28E-07	2.49E-07	2.19E-08	1.64E-07	2.94E-07	2.59E-07	1.31E-08	1.70E-07	3.71E-07	2.47E-07	1.14E-08	1.63E-07	3.99E-07	5.66E-07	6.29E-07	6.29E-07	2.19E-04
3453	482400	3623800	Residential	100m grid	1.05E-07	2.04E-07	1.80E-08	1.35E-07	2.41E-07	2.13E-07	1.08E-08	1.39E-07	3.04E-07	2.03E-07	9.38E-09	1.34E-07	3.27E-07	4.65E-07	5.17E-07	5.17E-07	1.80E-04
3454	482500	3623800	Residential	100m grid	8.87E-08	1.70E-07	1.50E-08	1.12E-07	2.00E-07	1.77E-07	8.95E-09	1.16E-07	2.53E-07	1.68E-07	7.79E-09	1.11E-07	2.73E-07	3.86E-07	4.29E-07	4.29E-07	1.49E-04
3455	482600	3623800	Residential	100m grid	7.73E-08	1.44E-07	1.27E-08	9.55E-08	1.70E-07	1.50E-07	7.60E-09	9.82E-08	2.15E-07	1.43E-07	6.62E-09	9.45E-08	2.34E-07	3.28E-07	3.64E-07	3.64E-07	1.27E-04
3456	482700	3623800	Residential	100m grid	6.93E-08	1.26E-07	1.10E-08	8.31E-08	1.47E-07	1.30E-07	6.59E-09	8.51E-08	1.86E-07	1.24E-07	5.73E-09	8.19E-08	2.06E-07	2.84E-07	3.16E-07	3.16E-07	1.10E-04
3457	482800	3623800	Residential	100m grid	6.33E-08	1.10E-07	9.63E-09	7.30E-08	1.29E-07	1.14E-07	5.76E-09	7.45E-08	1.63E-07	1.08E-07	5.02E-09	7.16E-08	1.83E-07	2.48E-07	2.76E-07	2.76E-07	9.62E-05
3458	482900	3623800	Residential	100m grid	5.86E-08	9.82E-08	8.53E-09	6.50E-08	1.14E-07	1.01E-07	5.10E-09	6.59E-08	1.44E-07	9.59E-08	4.44E-09	6.34E-08	1.65E-07	2.20E-07	2.45E-07	2.45E-07	8.52E-05
3459	483000	3623800	Residential	100m grid	5.47E-08	8.83E-08	7.63E-09	5.85E-08	1.02E-07	9.02E-08	4.57E-09	5.90E-08	1.29E-07	8.59E-08	3.98E-09	5.68E-08	1.51E-07	1.97E-07	2.19E-07	2.19E-07	7.62E-05
3460	483100	3623800	Residential	100m grid	5.14E-08	8.03E-08	6.91E-09	5.32E-08	9.25E-08	8.17E-08	4.14E-09	5.34E-08	1.17E-07	7.77E-08	3.60E-09	5.14E-08	1.39E-07	1.78E-07	1.98E-07	1.98E-07	6.90E-05
3461	483200	3623800	Residential	100m grid	4.83E-08	7.34E-08	6.29E-09	4.87E-08	8.43E-08	7.44E-08	3.77E-09	4.87E-08	1.06E-07	7.08E-08	3.28E-09	4.68E-08	1.28E-07	1.62E-07	1.80E-07	1.80E-07	6.29E-05
3462	483300	3623800	Residential	100m grid	4.54E-08	6.77E-08	5.78E-09	4.49E-08	7.75E-08	6.84E-08	3.46E-09	4.47E-08	9.78E-08	6.51E-08	3.01E-09	4.30E-08	1.19E-07	1.49E-07	1.66E-07	1.66E-07	5.78E-05
3463	483400	3623800	Residential	100m grid	4.28E-08	6.28E-08	5.35E-09	4.17E-08	7.17E-08	6.33E-08	3.21E-09	4.14E-08	9.05E-08	6.02E-08	2.79E-09	3.98E-08	1.11E-07	1.38E-07	1.54E-07	1.54E-07	5.35E-05
3464	483500	3623800	Residential	100m grid	4.04E-08	5.86E-08	4.98E-09	3.88E-08	6.67E-08	5.89E-08	2.98E-09	3.85E-08	8.43E-08	5.61E-08	2.60E-09	3.71E-08	1.04E-07	1.29E-07	1.43E-07	1.43E-07	4.98E-05
3465	483600	3623800	Residential	100m grid	3.81E-08	5.48E-08	4.66E-09	3.64E-08	6.24E-08	5.51E-08	2.79E-09	3.61E-08	7.88E-08	5.25E-08	2.43E-09	3.47E-08	9.76E-08	1.20E-07	1.34E-07	1.34E-07	4.66E-05
3466	479300	3623900	Residential	100m grid	2.59E-08	3.56E-08	3.00E-09	2.36E-08	4.02E-08	3.55E-08	1.80E-09	2.32E-08	5.07E-08	3.38E-08	1.56E-09	2.23E-08	6.44E-08	7.75E-08	8.61E-08	8.61E-08	3.00E-05
3467	479400	3623900	Residential	100m grid	2.67E-08	3.79E-08	3.21E-09	2.51E-08	4.30E-08	3.80E-08	1.92E-09	2.48E-08	5.43E-08	3.61E-08	1.67E-09	2.39E-08	6.78E-08	8.29E-08	9.21E-08	9.21E-08	3.21E-05

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	*HARP Output, Exposure Scenario A* Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario B* Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario C* Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	*Health Risk Quantified by Receptor Type* Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3468	479500	3623900	Residential	100m grid	2.76E-08	3.98E-08	3.39E-09	2.64E-08	4.54E-08	4.00E-08	2.03E-09	2.62E-08	5.73E-08	3.81E-08	1.76E-09	2.52E-08	7.08E-08	8.74E-08	9.71E-08	9.71E-08	3.38E-05
3469	479600	3623900	Residential	100m grid	2.85E-08	4.22E-08	3.60E-09	2.80E-08	4.82E-08	4.25E-08	2.15E-09	2.78E-08	6.08E-08	4.05E-08	1.87E-09	2.68E-08	7.42E-08	9.29E-08	1.03E-07	1.03E-07	3.59E-05
3481	481800	3623900	Residential	100m grid	4.77E-07	9.37E-07	8.29E-08	6.19E-07	1.11E-06	9.79E-07	4.96E-08	6.41E-07	1.40E-06	9.32E-07	4.32E-08	6.16E-07	1.50E-06	2.14E-06	2.38E-06	2.38E-06	8.28E-04
3482	481900	3623900	Residential	100m grid	3.46E-07	6.15E-07	5.37E-08	4.07E-07	7.19E-07	6.35E-07	3.22E-08	4.16E-07	9.08E-07	6.05E-07	2.80E-08	4.00E-07	1.01E-06	1.39E-06	1.54E-06	1.54E-06	5.37E-04
3483	482000	3623900	Residential	100m grid	2.45E-07	4.29E-07	3.74E-08	2.84E-07	5.01E-07	4.42E-07	2.24E-08	2.89E-07	6.33E-07	4.21E-07	1.95E-08	2.78E-07	7.11E-07	9.66E-07	1.07E-06	1.07E-06	3.74E-04
3484	482100	3623900	Residential	100m grid	2.06E-07	3.56E-07	3.10E-08	2.35E-07	4.15E-07	3.66E-07	1.86E-08	2.40E-07	5.24E-07	3.49E-07	1.61E-08	2.31E-07	5.92E-07	8.00E-07	8.89E-07	8.89E-07	3.10E-04
3485	482200	3623900	Residential	100m grid	1.61E-07	2.77E-07	2.41E-08	1.83E-07	3.23E-07	2.85E-07	1.45E-08	1.87E-07	4.08E-07	2.72E-07	1.26E-08	1.80E-07	4.62E-07	6.23E-07	6.92E-07	6.92E-07	2.41E-04
3486	482300	3623900	Residential	100m grid	1.32E-07	2.29E-07	1.99E-08	1.51E-07	2.67E-07	2.36E-07	1.19E-08	1.54E-07	3.37E-07	2.24E-07	1.04E-08	1.48E-07	3.81E-07	5.15E-07	5.72E-07	5.72E-07	1.99E-04
3487	482400	3623900	Residential	100m grid	1.12E-07	1.96E-07	1.72E-08	1.30E-07	2.30E-07	2.03E-07	1.03E-08	1.33E-07	2.90E-07	1.93E-07	8.94E-09	1.28E-07	3.26E-07	4.43E-07	4.92E-07	4.92E-07	1.71E-04
3488	482500	3623900	Residential	100m grid	9.33E-08	1.65E-07	1.44E-08	1.09E-07	1.93E-07	1.70E-07	8.62E-09	1.11E-07	2.43E-07	1.62E-07	7.50E-09	1.07E-07	2.72E-07	3.71E-07	4.13E-07	4.13E-07	1.44E-04
3489	482600	3623900	Residential	100m grid	7.94E-08	1.40E-07	1.22E-08	9.27E-08	1.64E-07	1.45E-07	7.33E-09	9.47E-08	2.07E-07	1.38E-07	6.38E-09	9.11E-08	2.32E-07	3.16E-07	3.51E-07	3.51E-07	1.22E-04
3490	482700	3623900	Residential	100m grid	6.91E-08	1.21E-07	1.06E-08	8.04E-08	1.42E-07	1.25E-07	6.35E-09	8.21E-08	1.79E-07	1.19E-07	5.53E-09	7.89E-08	2.01E-07	2.74E-07	3.04E-07	3.04E-07	1.06E-04
3491	482800	3623900	Residential	100m grid	6.15E-08	1.07E-07	9.34E-09	7.09E-08	1.25E-07	1.10E-07	5.59E-09	7.22E-08	1.58E-07	1.05E-07	4.87E-09	6.95E-08	1.78E-07	2.41E-07	2.68E-07	2.68E-07	9.33E-05
3492	482900	3623900	Residential	100m grid	5.57E-08	9.52E-08	8.29E-09	6.30E-08	1.11E-07	9.80E-08	4.96E-09	6.41E-08	1.40E-07	9.33E-08	4.32E-09	6.17E-08	1.59E-07	2.14E-07	2.38E-07	2.38E-07	8.28E-05
3493	483000	3623900	Residential	100m grid	5.12E-08	8.54E-08	7.41E-09	5.66E-08	9.93E-08	8.76E-08	4.44E-09	5.73E-08	1.25E-07	8.34E-08	3.86E-09	5.52E-08	1.44E-07	1.91E-07	2.13E-07	2.13E-07	7.41E-05
3494	483100	3623900	Residential	100m grid	4.79E-08	7.75E-08	6.70E-09	5.13E-08	8.97E-08	7.92E-08	4.01E-09	5.18E-08	1.13E-07	7.54E-08	3.49E-09	4.98E-08	1.32E-07	1.73E-07	1.92E-07	1.92E-07	6.69E-05
3495	483200	3623900	Residential	100m grid	4.53E-08	7.11E-08	6.12E-09	4.71E-08	8.20E-08	7.23E-08	3.66E-09	4.73E-08	1.03E-07	6.89E-08	3.19E-09	4.55E-08	1.23E-07	1.58E-07	1.76E-07	1.76E-07	6.11E-05
3496	483300	3623900	Residential	100m grid	4.29E-08	6.54E-08	5.60E-09	4.33E-08	7.50E-08	6.62E-08	3.35E-09	4.33E-08	9.47E-08	6.31E-08	2.92E-09	4.17E-08	1.14E-07	1.45E-07	1.61E-07	1.61E-07	5.60E-05
3497	483400	3623900	Residential	100m grid	4.08E-08	6.06E-08	5.18E-09	4.02E-08	6.93E-08	6.12E-08	3.10E-09	4.00E-08	8.75E-08	5.83E-08	2.70E-09	3.85E-08	1.07E-07	1.34E-07	1.48E-07	1.48E-07	5.17E-05
3498	483500	3623900	Residential	100m grid	3.89E-08	5.67E-08	4.82E-09	3.76E-08	6.46E-08	5.70E-08	2.89E-09	3.73E-08	8.16E-08	5.43E-08	2.51E-09	3.59E-08	1.00E-07	1.24E-07	1.38E-07	1.38E-07	4.82E-05
3499	483600	3623900	Residential	100m grid	3.71E-08	5.31E-08	4.51E-09	3.52E-08	6.04E-08	5.33E-08	2.70E-09	3.49E-08	7.63E-08	5.08E-08	2.35E-09	3.36E-08	9.47E-08	1.16E-07	1.29E-07	1.29E-07	4.51E-05
3500	479300	3624000	Residential	100m grid	2.28E-08	3.35E-08	2.86E-09	2.22E-08	3.83E-08	3.38E-08	1.71E-09	2.21E-08	4.83E-08	3.22E-08	1.49E-09	2.13E-08	5.92E-08	7.38E-08	8.20E-08	8.20E-08	2.86E-05
3501	479400	3624000	Residential	100m grid	2.34E-08	3.51E-08	3.00E-09	2.33E-08	4.02E-08	3.55E-08	1.80E-09	2.32E-08	5.08E-08	3.38E-08	1.57E-09	2.23E-08	6.15E-08	7.75E-08	8.62E-08	8.62E-08	3.00E-05
3502	479500	3624000	Residential	100m grid	2.41E-08	3.69E-08	3.16E-09	2.45E-08	4.24E-08	3.74E-08	1.89E-09	2.45E-08	5.35E-08	3.56E-08	1.65E-09	2.35E-08	6.42E-08	8.17E-08	9.08E-08	9.08E-08	3.16E-05
3517	481800	3624000	Residential	100m grid	3.76E-07	7.23E-07	6.38E-08	4.78E-07	8.54E-07	7.54E-07	3.82E-08	4.94E-07	1.08E-06	7.18E-07	3.32E-08	4.75E-07	1.16E-06	1.65E-06	1.83E-06	1.83E-06	6.37E-04
3518	481900	3624000	Residential	100m grid	2.99E-07	5.16E-07	4.50E-08	3.42E-07	6.02E-07	5.31E-07	2.69E-08	3.48E-07	7.60E-07	5.06E-07	2.34E-08	3.35E-07	8.60E-07	1.16E-06	1.29E-06	1.29E-06	4.49E-04
3519	482000	3624000	Residential	100m grid	2.37E-07	3.95E-07	3.43E-08	2.61E-07	4.59E-07	4.05E-07	2.05E-08	2.65E-07	5.79E-07	3.85E-07	1.78E-08	2.55E-07	6.66E-07	8.84E-07	9.82E-07	9.82E-07	3.42E-04
3520	482100	3624000	Residential	100m grid	1.89E-07	3.11E-07	2.69E-08	2.06E-07	3.61E-07	3.18E-07	1.61E-08	2.08E-07	4.55E-07	3.03E-07	1.40E-08	2.00E-07	5.27E-07	6.95E-07	7.73E-07	7.73E-07	2.69E-04
3521	482200	3624000	Residential	100m grid	1.58E-07	2.59E-07	2.24E-08	1.71E-07	3.00E-07	2.64E-07	1.34E-08	1.73E-07	3.78E-07	2.52E-07	1.17E-08	1.66E-07	4.39E-07	5.77E-07	6.42E-07	6.42E-07	2.24E-04
3522	482300	3624000	Residential	100m grid	1.34E-07	2.17E-07	1.88E-08	1.44E-07	2.51E-07	2.22E-07	1.12E-08	1.45E-07	3.17E-07	2.11E-07	9.78E-09	1.40E-07	3.69E-07	4.84E-07	5.38E-07	5.38E-07	1.87E-04
3523	482400	3624000	Residential	100m grid	1.14E-07	1.86E-07	1.61E-08	1.23E-07	2.16E-07	1.90E-07	9.64E-09	1.25E-07	2.72E-07	1.81E-07	8.39E-09	1.20E-07	3.16E-07	4.16E-07	4.62E-07	4.62E-07	1.61E-04
3524	482500	3624000	Residential	100m grid	9.82E-08	1.61E-07	1.40E-08	1.07E-07	1.87E-07	1.65E-07	8.36E-09	1.08E-07	2.36E-07	1.57E-07	7.28E-09	1.04E-07	2.74E-07	3.61E-07	4.01E-07	4.01E-07	1.40E-04
3525	482600	3624000	Residential	100m grid	8.40E-08	1.39E-07	1.20E-08	9.18E-08	1.61E-07	1.42E-07	7.19E-09	9.29E-08	2.03E-07	1.35E-07	6.26E-09	8.93E-08	2.35E-07	3.10E-07	3.44E-07	3.44E-07	1.20E-04
3526	482700	3624000	Residential	100m grid	7.25E-08	1.20E-07	1.04E-08	7.94E-08	1.39E-07	1.23E-07	6.22E-09	8.04E-08	1.76E-07	1.17E-07	5.42E-09	7.73E-08	2.03E-07	2.68E-07	2.98E-07	2.98E-07	1.04E-04
3527	482800	3624000	Residential	100m grid	6.36E-08	1.06E-07	9.16E-09	6.99E-08	1.23E-07	1.08E-07	5.48E-09	7.08E-08	1.55E-07	1.03E-07	4.77E-09	6.81E-08	1.78E-07	2.36E-07	2.63E-07	2.63E-07	9.15E-05
3528	482900	3624000	Residential	100m grid	5.65E-08	9.40E-08	8.15E-09	6.22E-08	1.09E-07	9.63E-08	4.88E-09	6.30E-08	1.38E-07	9.17E-08	4.25E-09	6.06E-08	1.59E-07	2.10E-07	2.34E-07	2.34E-07	8.14E-05
3529	483000	3624000	Residential	100m grid	5.05E-08	8.38E-08	7.27E-09	5.55E-08	9.73E-08	8.59E-08	4.35E-09	5.62E-08	1.23E-07	8.18E-08	3.79E-09	5.40E-08	1.42E-07	1.88E-07	2.08E-07	2.08E-07	7.26E-05
3530	483100	3624000	Residential	100m grid	4.65E-08	7.65E-08	6.62E-09	5.06E-08	8.87E-08	7.83E-08	3.96E-09	5.12E-08	1.12E-07	7.45E-08	3.45E-09	4.93E-08	1.30E-07	1.71E-07	1.90E-07	1.90E-07	6.62E-05
3531	483200	3624000	Residential	100m grid	4.30E-08	6.96E-08	6.01E-09	4.61E-08	8.05E-08	7.11E-08	3.60E-09	4.65E-08	1.02E-07	6.77E-08	3.13E-09	4.47E-08	1.19E-07	1.55E-07	1.72E-07	1.72E-07	6.01E-05
3532	483300	3624000	Residential	100m grid	4.01E-08	6.36E-08	5.48E-09	4.22E-08	7.35E-08	6.48E-08	3.28E-09	4.24E-08	9.27E-08	6.17E-08	2.86E-09	4.08E-08	1.09E-07	1.42E-07	1.57E-07	1.57E-07	5.48E-05
3533	483400	3624000	Residential	100m grid	3.81E-08	5.90E-08	5.07E-09	3.91E-08	6.79E-08	5.99E-08	3.03E-09	3.92E-08	8.57E-08	5.70E-08	2.64E-09	3.77E-08	1.02E-07	1.31E-07	1.45E-07	1.45E-07	5.06E-05
3534	483500	3624000	Residential	100m grid	3.65E-08	5.51E-08	4.71E-09	3.65E-08	6.31E-08	5.57E-08	2.82E-09	3.65E-08	7.97E-08	5.31E-08	2.46E-09	3.51E-08	9.63E-08	1.22E-07	1.35E-07	1.35E-07	4.71E-05
3535	483600	3624000	Residential	100m grid	3.53E-08	5.20E-08	4.44E-09	3.45E-08	5.94E-08	5.24E-08	2.66E-09	3.43E-08	7.50E-08	4.99E-08	2.31E-09	3.30E-08	9.17E-08	1.15E-07	1.27E-07	1.27E-07	4.43E-05
3536	479300	3624100	Residential	100m grid	2.02E-08	3.09E-08	2.65E-09	2.05E-08	3.55E-08	3.13E-08	1.59E-09	2.05E-08	4.48E-08	2.98E-08	1.38E-09	1.97E-08	5.38E-08	6.84E-08	7.61E-08	7.61E-08	2.65E-05
3537	479400	3624100	Residential	100m grid	2.09E-08	3.22E-08	2.76E-09	2.13E-08	3.70E-08	3.26E-08	1.65E-09	2.13E-08	4.67E-08	3.11E-08	1.44E-09	2.05E-08	5.58E-08	7.12E-08	7.92E-08	7.92E-08	2.76E-05
3538	479500	3624100	Residential	100m grid	2.17E-08	3.36E-08	2.88E-09	2.22E-08	3.86E-08	3.41E-08	1.72E-09	2.23E-08	4.87E-08	3.24E-08	1.50E-09	2.14E-08	5.82E-08	7.44E-08	8.26E-08	8.26E-08	2.88E-05
3539	479600	3624100	Residential	100m grid	2.29E-08	3.51E-08	3.01E-09	2.33E-08	4.03E-08	3.56E-08	1.80E-09	2.33E-08	5.09E-08	3.39E-08	1.57E-09	2.24E-08	6.10E-08	7.77E-08	8.63E-08	8.63E-08	3.01E-05
3549	480600	3624100	Residential	100m grid	4.36E-08	7.84E-08	6.86E-09	5.18E-08	9.19E-08	8.11E-08	4.11E-09	5.31E-08	1.16E-07	7.72E-08	3.57E-09	5.10E-08	1.29E-07	1.77E-07	1.97E-07	1.97E-07	6.85E-05
3553	481700	3624100	Residential	100m grid	3.48E-07	7.51E-07	6.70E-08	4.96E-07	8.98E-07	7.92E-07	4.01E-08	5.18E-07	1.13E-06	7.54E-07	3.49E-08	4.99E-07	1.17E-06	1.73E-06	1.92E-06	1.92E-06	6.70E-04
3554	481800	3624100	Residential	100m grid	3.13E-07	6.15E-07	5.44E-08	4.07E-07	7.29E-07	6.43E-07	3.26E-08	4.21E-07	9.20E-07	6.12E-07	2.84E-08	4.05E-07	9.83E-07	1.40E-06	1.56E-06	1.56E-06	5.44E-04
3555	481900	3624100	Residential	100m grid	2.43E-07	4.26E-07	3.72E-08	2.82E-07	4.98E-07	4.40E-07	2.23E-08	2.88E-07	6.29E-07	4.19E-07	1.94E-08	2.77E-07	7.06E-07	9.60E-07	1.07E-06	1.07E-06	3.72E-04
3556	482000	3624100	Residential	100m grid	2.05E-07	3.35E-07	2.89E-08	2.22E-07	3.88E-07	3.42E-07	1.73E-08	2.24E-07	4.89E-07	3.26E-07	1.51E-08	2.15E-07	5.69E-07	7.47E-07	8.30E-07	8.30E-07	2.89E-04
3557	482100	3624100	Residential	100m grid	1.79E-07	2.84E-07	2.45E-08	1.88E-07	3.28E-07	2.89E-07	1.46E-08	1.89E-07	4.14E-07	2.75E-07	1.27E-08	1.82E-07	4.87E-07	6.31E-07	7.02E-07	7.02E-07	2.44E-04
3558	482200	3624100	Residential	100m grid	1.53E-07	2.41E-07	2.07E-08	1.59E-07	2.77E-07	2.45E-07	1.24E-08	1.60E-07	3.50E-07	2.33E-07	1.08E-08	1.54E-07	4.14E-07	5.35E-07	5.94E-07	5.94E-07	2.07E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3559	482300	3624100	Residential	100m grid	1.31E-07	2.06E-07	1.77E-08	1.37E-07	2.38E-07	2.10E-07	1.06E-08	1.37E-07	3.00E-07	2.00E-07	9.25E-09	1.32E-07	3.55E-07	4.58E-07	5.09E-07	5.09E-07	1.77E-04
3560	482400	3624100	Residential	100m grid	1.14E-07	1.79E-07	1.54E-08	1.18E-07	2.06E-07	1.82E-07	9.20E-09	1.19E-07	2.60E-07	1.73E-07	8.01E-09	1.14E-07	3.08E-07	3.97E-07	4.41E-07	4.41E-07	1.54E-04
3561	482500	3624100	Residential	100m grid	9.94E-08	1.56E-07	1.34E-08	1.03E-07	1.80E-07	1.58E-07	8.02E-09	1.04E-07	2.27E-07	1.51E-07	6.98E-09	9.97E-08	2.69E-07	3.46E-07	3.84E-07	3.84E-07	1.34E-04
3562	482600	3624100	Residential	100m grid	8.67E-08	1.36E-07	1.17E-08	9.02E-08	1.57E-07	1.38E-07	7.01E-09	9.06E-08	1.98E-07	1.32E-07	6.10E-09	8.72E-08	2.35E-07	3.02E-07	3.36E-07	3.36E-07	1.17E-04
3563	482700	3624100	Residential	100m grid	7.59E-08	1.19E-07	1.03E-08	7.89E-08	1.37E-07	1.21E-07	6.14E-09	7.93E-08	1.73E-07	1.15E-07	5.34E-09	7.63E-08	2.05E-07	2.65E-07	2.94E-07	2.94E-07	1.02E-04
3564	482800	3624100	Residential	100m grid	6.73E-08	1.06E-07	9.09E-09	7.00E-08	1.22E-07	1.07E-07	5.44E-09	7.03E-08	1.54E-07	1.02E-07	4.74E-09	6.76E-08	1.82E-07	2.35E-07	2.61E-07	2.61E-07	9.08E-05
3565	482900	3624100	Residential	100m grid	5.89E-08	9.29E-08	8.00E-09	6.16E-08	1.07E-07	9.46E-08	4.79E-09	6.19E-08	1.35E-07	9.01E-08	4.17E-09	5.95E-08	1.60E-07	2.07E-07	2.30E-07	2.30E-07	8.00E-05
3566	483000	3624100	Residential	100m grid	5.22E-08	8.29E-08	7.15E-09	5.49E-08	9.57E-08	8.45E-08	4.28E-09	5.53E-08	1.21E-07	8.04E-08	3.72E-09	5.32E-08	1.42E-07	1.84E-07	2.05E-07	2.05E-07	7.14E-05
3567	483100	3624100	Residential	100m grid	4.69E-08	7.49E-08	6.47E-09	4.96E-08	8.66E-08	7.64E-08	3.87E-09	5.00E-08	1.09E-07	7.28E-08	3.37E-09	4.81E-08	1.28E-07	1.67E-07	1.85E-07	1.85E-07	6.46E-05
3568	483200	3624100	Residential	100m grid	4.41E-08	7.02E-08	6.06E-09	4.65E-08	8.11E-08	7.16E-08	3.63E-09	4.68E-08	1.02E-07	6.81E-08	3.16E-09	4.51E-08	1.20E-07	1.56E-07	1.74E-07	1.74E-07	6.05E-05
3569	483300	3624100	Residential	100m grid	3.95E-08	6.29E-08	5.42E-09	4.16E-08	7.26E-08	6.41E-08	3.25E-09	4.19E-08	9.17E-08	6.10E-08	2.82E-09	4.03E-08	1.08E-07	1.40E-07	1.55E-07	1.55E-07	5.42E-05
3570	483400	3624100	Residential	100m grid	3.68E-08	5.81E-08	5.01E-09	3.85E-08	6.70E-08	5.92E-08	3.00E-09	3.87E-08	8.46E-08	5.63E-08	2.61E-09	3.72E-08	9.99E-08	1.29E-07	1.44E-07	1.44E-07	5.00E-05
3571	483500	3624100	Residential	100m grid	3.47E-08	5.41E-08	4.65E-09	3.59E-08	6.23E-08	5.50E-08	2.79E-09	3.60E-08	7.87E-08	5.24E-08	2.42E-09	3.46E-08	9.35E-08	1.20E-07	1.33E-07	1.33E-07	4.65E-05
3572	483600	3624100	Residential	100m grid	3.33E-08	5.11E-08	4.38E-09	3.38E-08	5.87E-08	5.18E-08	2.62E-09	3.39E-08	7.41E-08	4.93E-08	2.28E-09	3.26E-08	8.88E-08	1.13E-07	1.26E-07	1.26E-07	4.38E-05
3573	479300	3624200	Residential	100m grid	1.85E-08	2.82E-08	2.42E-09	1.87E-08	3.23E-08	2.85E-08	1.45E-09	1.87E-08	4.08E-08	2.72E-08	1.26E-09	1.80E-08	4.91E-08	6.23E-08	6.93E-08	6.93E-08	2.41E-05
3574	479400	3624200	Residential	100m grid	1.94E-08	2.92E-08	2.50E-09	1.94E-08	3.35E-08	2.96E-08	1.50E-09	1.94E-08	4.23E-08	2.82E-08	1.30E-09	1.86E-08	5.11E-08	6.46E-08	7.18E-08	7.18E-08	2.50E-05
3575	479500	3624200	Residential	100m grid	2.05E-08	3.04E-08	2.60E-09	2.02E-08	3.48E-08	3.07E-08	1.56E-09	2.01E-08	4.39E-08	2.92E-08	1.35E-09	1.93E-08	5.35E-08	6.70E-08	7.45E-08	7.45E-08	2.60E-05
3576	479600	3624200	Residential	100m grid	2.19E-08	3.19E-08	2.71E-09	2.11E-08	3.63E-08	3.21E-08	1.62E-09	2.10E-08	4.59E-08	3.05E-08	1.41E-09	2.02E-08	5.64E-08	7.00E-08	7.78E-08	7.78E-08	2.71E-05
3594	481700	3624200	Residential	100m grid	3.05E-07	6.36E-07	5.66E-08	4.20E-07	7.58E-07	6.69E-07	3.39E-08	4.38E-07	9.57E-07	6.37E-07	2.95E-08	4.21E-07	9.98E-07	1.46E-06	1.62E-06	1.62E-06	5.65E-04
3595	481800	3624200	Residential	100m grid	2.34E-07	4.58E-07	4.05E-08	3.03E-07	5.42E-07	4.78E-07	2.42E-08	3.13E-07	6.84E-07	4.56E-07	2.11E-08	3.01E-07	7.32E-07	1.04E-06	1.16E-06	1.16E-06	4.04E-04
3596	481900	3624200	Residential	100m grid	1.92E-07	3.49E-07	3.06E-08	2.31E-07	4.10E-07	3.62E-07	1.83E-08	2.37E-07	5.18E-07	3.45E-07	1.60E-08	2.28E-07	5.71E-07	7.91E-07	8.79E-07	8.79E-07	3.06E-04
3597	482000	3624200	Residential	100m grid	1.82E-07	3.01E-07	2.60E-08	1.99E-07	3.49E-07	3.08E-07	1.56E-08	2.01E-07	4.40E-07	2.93E-07	1.36E-08	1.94E-07	5.08E-07	6.72E-07	7.47E-07	7.47E-07	2.60E-04
3598	482100	3624200	Residential	100m grid	1.67E-07	2.61E-07	2.25E-08	1.73E-07	3.01E-07	2.65E-07	1.34E-08	1.74E-07	3.80E-07	2.53E-07	1.17E-08	1.67E-07	4.51E-07	5.80E-07	6.44E-07	6.44E-07	2.24E-04
3599	482200	3624200	Residential	100m grid	1.47E-07	2.26E-07	1.94E-08	1.50E-07	2.59E-07	2.29E-07	1.16E-08	1.50E-07	3.27E-07	2.18E-07	1.01E-08	1.44E-07	3.92E-07	5.00E-07	5.56E-07	5.56E-07	1.93E-04
3600	482300	3624200	Residential	100m grid	1.28E-07	1.96E-07	1.69E-08	1.30E-07	2.26E-07	1.99E-07	1.01E-08	1.30E-07	2.85E-07	1.90E-07	8.78E-09	1.25E-07	3.41E-07	4.35E-07	4.83E-07	4.83E-07	1.68E-04
3601	482400	3624200	Residential	100m grid	1.12E-07	1.72E-07	1.47E-08	1.14E-07	1.97E-07	1.74E-07	8.81E-09	1.14E-07	2.49E-07	1.66E-07	7.67E-09	1.10E-07	2.98E-07	3.80E-07	4.22E-07	4.22E-07	1.47E-04
3602	482500	3624200	Residential	100m grid	9.88E-08	1.51E-07	1.30E-08	1.00E-07	1.73E-07	1.53E-07	7.75E-09	1.00E-07	2.19E-07	1.46E-07	6.75E-09	9.64E-08	2.63E-07	3.34E-07	3.71E-07	3.71E-07	1.29E-04
3603	482600	3624200	Residential	100m grid	8.76E-08	1.33E-07	1.14E-08	8.84E-08	1.53E-07	1.35E-07	6.85E-09	8.84E-08	1.93E-07	1.29E-07	5.96E-09	8.51E-08	2.32E-07	2.95E-07	3.28E-07	3.28E-07	1.14E-04
3604	482700	3624200	Residential	100m grid	7.77E-08	1.18E-07	1.01E-08	7.82E-08	1.35E-07	1.19E-07	6.05E-09	7.82E-08	1.71E-07	1.14E-07	5.27E-09	7.52E-08	2.06E-07	2.61E-07	2.90E-07	2.90E-07	1.01E-04
3605	482800	3624200	Residential	100m grid	7.02E-08	1.06E-07	9.05E-09	7.01E-08	1.21E-07	1.07E-07	5.42E-09	7.00E-08	1.53E-07	1.02E-07	4.72E-09	6.74E-08	1.85E-07	2.34E-07	2.60E-07	2.60E-07	9.04E-05
3606	482900	3624200	Residential	100m grid	6.22E-08	9.36E-08	8.01E-09	6.21E-08	1.07E-07	9.47E-08	4.80E-09	6.20E-08	1.35E-07	9.01E-08	4.17E-09	5.96E-08	1.64E-07	2.07E-07	2.30E-07	2.30E-07	8.00E-05
3607	483000	3624200	Residential	100m grid	5.46E-08	8.27E-08	7.08E-09	5.48E-08	9.49E-08	8.37E-08	4.24E-09	5.48E-08	1.20E-07	7.97E-08	3.69E-09	5.27E-08	1.44E-07	1.83E-07	2.03E-07	2.03E-07	7.08E-05
3608	483100	3624200	Residential	100m grid	4.90E-08	7.47E-08	6.40E-09	4.95E-08	8.57E-08	7.57E-08	3.83E-09	4.95E-08	1.08E-07	7.20E-08	3.34E-09	4.76E-08	1.30E-07	1.65E-07	1.84E-07	1.84E-07	6.39E-05
3609	483200	3624200	Residential	100m grid	4.47E-08	6.86E-08	5.88E-09	4.55E-08	7.88E-08	6.95E-08	3.52E-09	4.55E-08	9.95E-08	6.62E-08	3.07E-09	4.38E-08	1.19E-07	1.52E-07	1.69E-07	1.69E-07	5.88E-05
3610	483300	3624200	Residential	100m grid	4.10E-08	6.33E-08	5.43E-09	4.19E-08	7.27E-08	6.42E-08	3.25E-09	4.20E-08	9.18E-08	6.11E-08	2.83E-09	4.04E-08	1.10E-07	1.40E-07	1.56E-07	1.56E-07	5.42E-05
3611	483400	3624200	Residential	100m grid	3.85E-08	5.94E-08	5.10E-09	3.93E-08	6.83E-08	6.02E-08	3.05E-09	3.94E-08	8.62E-08	5.74E-08	2.66E-09	3.79E-08	1.03E-07	1.32E-07	1.46E-07	1.46E-07	5.09E-05
3612	483500	3624200	Residential	100m grid	3.49E-08	5.41E-08	4.65E-09	3.59E-08	6.22E-08	5.49E-08	2.78E-09	3.60E-08	7.86E-08	5.23E-08	2.42E-09	3.46E-08	9.37E-08	1.20E-07	1.33E-07	1.33E-07	4.64E-05
3613	483600	3624200	Residential	100m grid	3.27E-08	5.05E-08	4.34E-09	3.35E-08	5.81E-08	5.13E-08	2.60E-09	3.35E-08	7.33E-08	4.88E-08	2.26E-09	3.23E-08	8.75E-08	1.12E-07	1.24E-07	1.24E-07	4.33E-05
3614	479300	3624300	Residential	100m grid	1.76E-08	2.57E-08	2.19E-09	1.71E-08	2.93E-08	2.59E-08	1.31E-09	1.70E-08	3.71E-08	2.47E-08	1.14E-09	1.63E-08	4.55E-08	5.66E-08	6.29E-08	6.29E-08	2.19E-05
3615	479400	3624300	Residential	100m grid	1.87E-08	2.67E-08	2.27E-09	1.77E-08	3.04E-08	2.68E-08	1.36E-09	1.76E-08	3.84E-08	2.56E-08	1.18E-09	1.69E-08	4.77E-08	5.86E-08	6.51E-08	6.51E-08	2.27E-05
3616	479500	3624300	Residential	100m grid	1.99E-08	2.79E-08	2.37E-09	1.85E-08	3.17E-08	2.80E-08	1.42E-09	1.83E-08	4.00E-08	2.66E-08	1.23E-09	1.76E-08	5.02E-08	6.11E-08	6.79E-08	6.79E-08	2.36E-05
3617	479600	3624300	Residential	100m grid	2.13E-08	2.94E-08	2.48E-09	1.95E-08	3.32E-08	2.93E-08	1.48E-09	1.92E-08	4.19E-08	2.79E-08	1.29E-09	1.84E-08	5.32E-08	6.40E-08	7.11E-08	7.11E-08	2.48E-05
3618	479700	3624300	Residential	100m grid	2.29E-08	3.11E-08	2.62E-09	2.06E-08	3.50E-08	3.09E-08	1.57E-09	2.02E-08	4.42E-08	2.94E-08	1.36E-09	1.95E-08	5.66E-08	6.75E-08	7.50E-08	7.50E-08	2.61E-05
3639	481800	3624300	Residential	100m grid	1.86E-07	3.62E-07	3.20E-08	2.39E-07	4.28E-07	3.78E-07	1.91E-08	2.47E-07	5.41E-07	3.60E-07	1.67E-08	2.38E-07	5.81E-07	8.25E-07	9.17E-07	9.17E-07	3.19E-04
3640	481900	3624300	Residential	100m grid	1.63E-07	3.04E-07	2.68E-08	2.01E-07	3.58E-07	3.16E-07	1.60E-08	2.07E-07	4.52E-07	3.01E-07	1.39E-08	1.99E-07	4.94E-07	6.90E-07	7.67E-07	7.67E-07	2.67E-04
3641	482000	3624300	Residential	100m grid	1.57E-07	2.69E-07	2.34E-08	1.78E-07	3.13E-07	2.77E-07	1.40E-08	1.81E-07	3.96E-07	2.63E-07	1.22E-08	1.74E-07	4.50E-07	6.04E-07	6.71E-07	6.71E-07	2.34E-04
3642	482100	3624300	Residential	100m grid	1.53E-07	2.41E-07	2.07E-08	1.59E-07	2.77E-07	2.45E-07	1.24E-08	1.60E-07	3.50E-07	2.33E-07	1.08E-08	1.54E-07	4.14E-07	5.35E-07	5.94E-07	5.94E-07	2.07E-04
3643	482200	3624300	Residential	100m grid	1.43E-07	2.16E-07	1.85E-08	1.43E-07	2.48E-07	2.19E-07	1.11E-08	1.43E-07	3.13E-07	2.08E-07	9.65E-09	1.38E-07	3.77E-07	4.78E-07	5.31E-07	5.31E-07	1.85E-04
3644	482300	3624300	Residential	100m grid	1.24E-07	1.87E-07	1.60E-08	1.24E-07	2.14E-07	1.89E-07	9.56E-09	1.24E-07	2.70E-07	1.80E-07	8.32E-09	1.19E-07	3.27E-07	4.12E-07	4.58E-07	4.58E-07	1.60E-04
3645	482400	3624300	Residential	100m grid	1.09E-07	1.65E-07	1.41E-08	1.09E-07	1.89E-07	1.67E-07	8.45E-09	1.09E-07	2.39E-07	1.59E-07	7.35E-09	1.05E-07	2.88E-07	3.64E-07	4.05E-07	4.05E-07	1.41E-04
3646	482500	3624300	Residential	100m grid	9.68E-08	1.46E-07	1.25E-08	9.69E-08	1.68E-07	1.48E-07	7.49E-09	9.68E-08	2.12E-07	1.41E-07	6.52E-09	9.31E-08	2.56E-07	3.23E-07	3.59E-07	3.59E-07	1.25E-04
3647	482600	3624300	Residential	100m grid	8.68E-08	1.30E-07	1.12E-08	8.65E-08	1.49E-07	1.32E-07	6.68E-09	8.63E-08	1.89E-07	1.26E-07	5.81E-09	8.30E-08	2.28E-07	2.88E-07	3.20E-07	3.20E-07	1.11E-04
3648	482700	3624300	Residential	100m grid	7.87E-08	1.17E-07	1.00E-08	7.78E-08	1.34E-07	1.19E-07	6.01E-09	7.76E-08	1.70E-07	1.13E-07	5.23E-09	7.46E-08	2.06E-07	2.59E-07	2.88E-07	2.88E-07	1.00E-04
3649	482800	3624300	Residential	100m grid	7.07E-08	1.05E-07	8.92E-09	6.93E-08	1.19E-07	1.05E-07	5.34E-09	6.90E-08	1.51E-07	1.00E-07	4.65E-09	6.64E-08	1.84E-07	2.30E-07	2.56E-07	2.56E-07	8.91E-05

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3650	482900	3624300	Residential	100m grid	6.96E-08	1.01E-07	8.56E-09	6.67E-08	1.15E-07	1.01E-07	5.12E-09	6.62E-08	1.45E-07	9.63E-08	4.46E-09	6.37E-08	1.79E-07	2.21E-07	2.45E-07	2.45E-07	8.55E-05
3651	483000	3624300	Residential	100m grid	5.79E-08	8.44E-08	7.18E-09	5.59E-08	9.62E-08	8.49E-08	4.30E-09	5.56E-08	1.21E-07	8.08E-08	3.74E-09	5.34E-08	1.49E-07	1.85E-07	2.06E-07	2.06E-07	7.18E-05
3652	483100	3624300	Residential	100m grid	5.18E-08	7.56E-08	6.44E-09	5.02E-08	8.63E-08	7.61E-08	3.86E-09	4.98E-08	1.09E-07	7.25E-08	3.36E-09	4.79E-08	1.34E-07	1.66E-07	1.85E-07	1.85E-07	6.44E-05
3653	483200	3624300	Residential	100m grid	4.77E-08	6.98E-08	5.94E-09	4.63E-08	7.96E-08	7.03E-08	3.56E-09	4.60E-08	1.01E-07	6.69E-08	3.10E-09	4.42E-08	1.23E-07	1.53E-07	1.71E-07	1.71E-07	5.94E-05
3654	483300	3624300	Residential	100m grid	4.44E-08	6.51E-08	5.55E-09	4.32E-08	7.44E-08	6.56E-08	3.32E-09	4.29E-08	9.39E-08	6.25E-08	2.89E-09	4.13E-08	1.15E-07	1.43E-07	1.59E-07	1.59E-07	5.55E-05
3655	483400	3624300	Residential	100m grid	4.38E-08	6.45E-08	5.50E-09	4.28E-08	7.37E-08	6.50E-08	3.29E-09	4.25E-08	9.30E-08	6.19E-08	2.87E-09	4.09E-08	1.14E-07	1.42E-07	1.58E-07	1.58E-07	5.50E-05
3656	483500	3624300	Residential	100m grid	3.63E-08	5.43E-08	4.64E-09	3.60E-08	6.22E-08	5.49E-08	2.78E-09	3.59E-08	7.85E-08	5.22E-08	2.42E-09	3.45E-08	9.52E-08	1.20E-07	1.33E-07	1.33E-07	4.64E-05
3657	483600	3624300	Residential	100m grid	4.14E-08	6.22E-08	5.32E-09	4.12E-08	7.13E-08	6.29E-08	3.19E-09	4.12E-08	9.00E-08	5.99E-08	2.77E-09	3.96E-08	1.09E-07	1.37E-07	1.53E-07	1.53E-07	5.32E-05
3661	479600	3624400	Residential	100m grid	2.08E-08	2.75E-08	2.30E-09	1.82E-08	3.08E-08	2.72E-08	1.38E-09	1.78E-08	3.89E-08	2.59E-08	1.20E-09	1.71E-08	5.06E-08	5.94E-08	6.61E-08	6.61E-08	2.30E-05
3662	479700	3624400	Residential	100m grid	2.23E-08	2.91E-08	2.44E-09	1.93E-08	3.26E-08	2.88E-08	1.46E-09	1.88E-08	4.12E-08	2.74E-08	1.27E-09	1.81E-08	5.38E-08	6.29E-08	6.99E-08	6.99E-08	2.43E-05
3685	482000	3624400	Residential	100m grid	1.43E-07	2.50E-07	2.18E-08	1.65E-07	2.92E-07	2.58E-07	1.30E-08	1.69E-07	3.69E-07	2.45E-07	1.14E-08	1.62E-07	4.15E-07	5.63E-07	6.25E-07	6.25E-07	2.18E-04
3686	482100	3624400	Residential	100m grid	1.40E-07	2.26E-07	1.95E-08	1.50E-07	2.61E-07	2.31E-07	1.17E-08	1.51E-07	3.30E-07	2.20E-07	1.02E-08	1.45E-07	3.85E-07	5.04E-07	5.60E-07	5.60E-07	1.95E-04
3687	482200	3624400	Residential	100m grid	1.31E-07	1.99E-07	1.70E-08	1.32E-07	2.28E-07	2.01E-07	1.02E-08	1.32E-07	2.88E-07	1.92E-07	8.88E-09	1.27E-07	3.47E-07	4.40E-07	4.89E-07	4.89E-07	1.70E-04
3688	482300	3624400	Residential	100m grid	1.20E-07	1.77E-07	1.51E-08	1.17E-07	2.02E-07	1.79E-07	9.05E-09	1.17E-07	2.55E-07	1.70E-07	7.87E-09	1.12E-07	3.12E-07	3.90E-07	4.33E-07	4.33E-07	1.51E-04
3689	482400	3624400	Residential	100m grid	1.06E-07	1.58E-07	1.35E-08	1.05E-07	1.80E-07	1.59E-07	8.07E-09	1.04E-07	2.28E-07	1.52E-07	7.02E-09	1.00E-07	2.78E-07	3.48E-07	3.87E-07	3.87E-07	1.35E-04
3690	482500	3624400	Residential	100m grid	9.46E-08	1.42E-07	1.21E-08	9.39E-08	1.62E-07	1.43E-07	7.25E-09	9.37E-08	2.05E-07	1.36E-07	6.31E-09	9.01E-08	2.48E-07	3.13E-07	3.48E-07	3.48E-07	1.21E-04
3691	482600	3624400	Residential	100m grid	8.50E-08	1.27E-07	1.09E-08	8.44E-08	1.46E-07	1.29E-07	6.51E-09	8.42E-08	1.84E-07	1.22E-07	5.67E-09	8.09E-08	2.23E-07	2.81E-07	3.12E-07	3.12E-07	1.09E-04
3692	482700	3624400	Residential	100m grid	7.85E-08	1.17E-07	9.97E-09	7.74E-08	1.34E-07	1.18E-07	5.97E-09	7.71E-08	1.69E-07	1.12E-07	5.20E-09	7.42E-08	2.05E-07	2.57E-07	2.86E-07	2.86E-07	9.96E-05
3693	482800	3624400	Residential	100m grid	7.20E-08	1.06E-07	9.01E-09	7.01E-08	1.21E-07	1.07E-07	5.40E-09	6.97E-08	1.52E-07	1.01E-07	4.70E-09	6.71E-08	1.87E-07	2.33E-07	2.58E-07	2.58E-07	9.00E-05
3694	482900	3624400	Residential	100m grid	7.91E-08	1.14E-07	9.65E-09	7.53E-08	1.29E-07	1.14E-07	5.78E-09	7.46E-08	1.63E-07	1.09E-07	5.03E-09	7.18E-08	2.02E-07	2.49E-07	2.77E-07	2.77E-07	9.64E-05
3695	483000	3624400	Residential	100m grid	7.88E-08	1.13E-07	9.57E-09	7.47E-08	1.28E-07	1.13E-07	5.73E-09	7.40E-08	1.62E-07	1.08E-07	4.99E-09	7.12E-08	2.01E-07	2.47E-07	2.74E-07	2.74E-07	9.56E-05
3696	483100	3624400	Residential	100m grid	7.23E-08	1.03E-07	8.72E-09	6.82E-08	1.17E-07	1.03E-07	5.22E-09	6.74E-08	1.47E-07	9.81E-08	4.54E-09	6.48E-08	1.84E-07	2.25E-07	2.50E-07	2.50E-07	8.71E-05
3697	483200	3624400	Residential	100m grid	6.50E-08	9.21E-08	7.81E-09	6.11E-08	1.05E-07	9.23E-08	4.68E-09	6.04E-08	1.32E-07	8.79E-08	4.07E-09	5.81E-08	1.65E-07	2.02E-07	2.24E-07	2.24E-07	7.81E-05
3698	483300	3624400	Residential	100m grid	5.81E-08	8.26E-08	7.01E-09	5.48E-08	9.39E-08	8.28E-08	4.20E-09	5.42E-08	1.19E-07	7.89E-08	3.65E-09	5.22E-08	1.48E-07	1.81E-07	2.01E-07	2.01E-07	7.00E-05
3699	483400	3624400	Residential	100m grid	5.23E-08	7.47E-08	6.35E-09	4.96E-08	8.50E-08	7.50E-08	3.80E-09	4.91E-08	1.07E-07	7.14E-08	3.31E-09	4.72E-08	1.33E-07	1.64E-07	1.82E-07	1.82E-07	6.34E-05
3700	483500	3624400	Residential	100m grid	4.42E-08	6.33E-08	5.38E-09	4.20E-08	7.20E-08	6.36E-08	3.22E-09	4.16E-08	9.09E-08	6.05E-08	2.80E-09	4.00E-08	1.13E-07	1.39E-07	1.54E-07	1.54E-07	5.37E-05
3701	483600	3624400	Residential	100m grid	4.48E-08	6.55E-08	5.58E-09	4.34E-08	7.47E-08	6.60E-08	3.34E-09	4.32E-08	9.44E-08	6.28E-08	2.91E-09	4.15E-08	1.16E-07	1.44E-07	1.60E-07	1.60E-07	5.58E-05
3731	482200	3624500	Residential	100m grid	1.18E-07	1.83E-07	1.57E-08	1.21E-07	2.11E-07	1.86E-07	9.42E-09	1.22E-07	2.66E-07	1.77E-07	8.20E-09	1.17E-07	3.17E-07	4.06E-07	4.51E-07	4.51E-07	1.57E-04
3732	482300	3624500	Residential	100m grid	1.13E-07	1.65E-07	1.41E-08	1.10E-07	1.89E-07	1.66E-07	8.43E-09	1.09E-07	2.38E-07	1.58E-07	7.33E-09	1.05E-07	2.92E-07	3.63E-07	4.04E-07	4.04E-07	1.41E-04
3733	482400	3624500	Residential	100m grid	1.04E-07	1.50E-07	1.28E-08	9.95E-08	1.71E-07	1.51E-07	7.64E-09	9.87E-08	2.16E-07	1.44E-07	6.65E-09	9.50E-08	2.67E-07	3.30E-07	3.66E-07	3.66E-07	1.28E-04
3734	482500	3624500	Residential	100m grid	9.40E-08	1.38E-07	1.18E-08	9.15E-08	1.58E-07	1.39E-07	7.04E-09	9.10E-08	1.99E-07	1.32E-07	6.13E-09	8.75E-08	2.44E-07	3.04E-07	3.38E-07	3.38E-07	1.18E-04
3735	482600	3624500	Residential	100m grid	8.78E-08	1.30E-07	1.11E-08	8.61E-08	1.48E-07	1.31E-07	6.63E-09	8.57E-08	1.87E-07	1.25E-07	5.77E-09	8.24E-08	2.29E-07	2.86E-07	3.18E-07	3.18E-07	1.11E-04
3736	482700	3624500	Residential	100m grid	8.08E-08	1.19E-07	1.02E-08	7.92E-08	1.36E-07	1.20E-07	6.10E-09	7.88E-08	1.72E-07	1.15E-07	5.31E-09	7.58E-08	2.10E-07	2.63E-07	2.92E-07	2.92E-07	1.02E-04
3737	482800	3624500	Residential	100m grid	9.52E-08	1.41E-07	1.20E-08	9.33E-08	1.61E-07	1.42E-07	7.18E-09	9.28E-08	2.03E-07	1.35E-07	6.25E-09	8.93E-08	2.48E-07	3.10E-07	3.44E-07	3.44E-07	1.20E-04
3738	482900	3624500	Residential	100m grid	8.84E-08	1.29E-07	1.10E-08	8.56E-08	1.47E-07	1.30E-07	6.59E-09	8.51E-08	1.86E-07	1.24E-07	5.73E-09	8.18E-08	2.29E-07	2.84E-07	3.16E-07	3.16E-07	1.10E-04
3739	483000	3624500	Residential	100m grid	8.12E-08	1.17E-07	9.94E-09	7.76E-08	1.33E-07	1.18E-07	5.95E-09	7.69E-08	1.68E-07	1.12E-07	5.18E-09	7.40E-08	2.08E-07	2.57E-07	2.85E-07	2.85E-07	9.93E-05
3740	483100	3624500	Residential	100m grid	7.57E-08	1.08E-07	9.16E-09	7.16E-08	1.23E-07	1.08E-07	5.48E-09	7.08E-08	1.55E-07	1.03E-07	4.77E-09	6.81E-08	1.93E-07	2.36E-07	2.63E-07	2.63E-07	9.15E-05
3741	483200	3624500	Residential	100m grid	6.91E-08	9.74E-08	8.25E-09	6.46E-08	1.10E-07	9.75E-08	4.94E-09	6.38E-08	1.40E-07	9.28E-08	4.30E-09	6.14E-08	1.75E-07	2.13E-07	2.37E-07	2.37E-07	8.24E-05
3742	483300	3624500	Residential	100m grid	6.38E-08	8.96E-08	7.59E-09	5.95E-08	1.02E-07	8.97E-08	4.54E-09	5.87E-08	1.28E-07	8.54E-08	3.96E-09	5.65E-08	1.61E-07	1.96E-07	2.18E-07	2.18E-07	7.58E-05
3743	483400	3624500	Residential	100m grid	5.86E-08	8.25E-08	6.99E-09	5.48E-08	9.37E-08	8.27E-08	4.19E-09	5.41E-08	1.18E-07	7.87E-08	3.64E-09	5.20E-08	1.48E-07	1.80E-07	2.01E-07	2.01E-07	6.99E-05
3744	483500	3624500	Residential	100m grid	5.48E-08	7.81E-08	6.63E-09	5.18E-08	8.88E-08	7.84E-08	3.97E-09	5.13E-08	1.12E-07	7.46E-08	3.45E-09	4.93E-08	1.39E-07	1.71E-07	1.90E-07	1.90E-07	6.62E-05
3745	483600	3624500	Residential	100m grid	4.92E-08	7.01E-08	5.95E-09	4.65E-08	7.97E-08	7.04E-08	3.56E-09	4.61E-08	1.01E-07	6.70E-08	3.10E-09	4.43E-08	1.25E-07	1.54E-07	1.71E-07	1.71E-07	5.95E-05
3832	483500	3624700	Residential	100m grid	5.68E-08	7.90E-08	6.68E-09	5.24E-08	8.95E-08	7.90E-08	4.00E-09	5.17E-08	1.13E-07	7.52E-08	3.48E-09	4.97E-08	1.43E-07	1.72E-07	1.92E-07	1.92E-07	6.67E-05
3833	483600	3624700	Residential	100m grid	5.28E-08	7.32E-08	6.19E-09	4.86E-08	8.28E-08	7.31E-08	3.70E-09	4.78E-08	1.05E-07	6.96E-08	3.22E-09	4.60E-08	1.32E-07	1.60E-07	1.77E-07	1.77E-07	6.18E-05
3876	483500	3624800	Residential	100m grid	5.70E-08	7.99E-08	6.77E-09	5.30E-08	9.06E-08	8.00E-08	4.05E-09	5.23E-08	1.14E-07	7.62E-08	3.53E-09	5.04E-08	1.44E-07	1.75E-07	1.94E-07	1.94E-07	6.76E-05
3877	483600	3624800	Residential	100m grid	5.32E-08	7.36E-08	6.22E-09	4.88E-08	8.33E-08	7.35E-08	3.72E-09	4.81E-08	1.05E-07	7.00E-08	3.24E-09	4.63E-08	1.33E-07	1.60E-07	1.78E-07	1.78E-07	6.21E-05
3989	481600	3625100	Residential	100m grid	1.38E-07	2.02E-07	1.72E-08	1.34E-07	2.31E-07	2.04E-07	1.03E-08	1.33E-07	2.92E-07	1.94E-07	8.99E-09	1.28E-07	3.57E-07	4.45E-07	4.95E-07	4.95E-07	1.72E-04
3990	481700	3625100	Residential	100m grid	1.33E-07	1.98E-07	1.70E-08	1.32E-07	2.27E-07	2.00E-07	1.02E-08	1.31E-07	2.87E-07	1.91E-07	8.83E-09	1.26E-07	3.48E-07	4.38E-07	4.86E-07	4.86E-07	1.69E-04
3991	481800	3625100	Residential	100m grid	1.26E-07	1.93E-07	1.65E-08	1.28E-07	2.21E-07	1.95E-07	9.88E-09	1.28E-07	2.79E-07	1.86E-07	8.60E-09	1.23E-07	3.35E-07	4.26E-07	4.74E-07	4.74E-07	1.65E-04
3992	481900	3625100	Residential	100m grid	1.18E-07	1.84E-07	1.58E-08	1.22E-07	2.12E-07	1.87E-07	9.46E-09	1.22E-07	2.67E-07	1.78E-07	8.23E-09	1.18E-07	3.17E-07	4.08E-07	4.53E-07	4.53E-07	1.58E-04
3993	482000	3625100	Residential	100m grid	1.09E-07	1.74E-07	1.50E-08	1.15E-07	2.01E-07	1.78E-07	9.00E-09	1.16E-07	2.54E-07	1.69E-07	7.83E-09	1.12E-07	2.98E-07	3.88E-07	4.31E-07	4.31E-07	1.50E-04
3994	482100	3625100	Residential	100m grid	1.02E-07	1.66E-07	1.43E-08	1.10E-07	1.92E-07	1.69E-07	8.58E-09	1.11E-07	2.42E-07	1.61E-07	7.47E-09	1.07E-07	2.82E-07	3.70E-07	4.11E-07	4.11E-07	1.43E-04
3995	482200	3625100	Residential	100m grid	9.73E-08	1.58E-07	1.36E-08	1.05E-07	1.83E-07	1.61E-07	8.17E-09	1.06E-07	2.31E-07	1.54E-07	7.11E-09	1.02E-07	2.69E-07	3.52E-07	3.91E-07	3.91E-07	1.36E-04
3996	482300	3625100	Residential	100m grid	9.27E-08	1.50E-07	1.29E-08	9.91E-08	1.73E-07	1.53E-07	7.74E-09	1.00E-07	2.19E-07	1.45E-07	6.74E-09	9.62E-08	2.55E-07	3.34E-07	3.71E-07	3.71E-07	1.29E-04

Table D-A4.4-1 Health Risk Values at Modeled Sensitive Receptors, Alternative 4

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	*HARP Output, Exposure Scenario A* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario B* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario C* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*Health Risk Quantified by Receptor Type* Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3997	482400	3625100	Residential	100m grid	9.19E-08	1.44E-07	1.24E-08	9.53E-08	1.66E-07	1.46E-07	7.41E-09	9.57E-08	2.09E-07	1.39E-07	6.45E-09	9.20E-08	2.48E-07	3.19E-07	3.55E-07	3.55E-07	1.24E-04
3998	482500	3625100	Residential	100m grid	9.13E-08	1.38E-07	1.18E-08	9.15E-08	1.58E-07	1.40E-07	7.07E-09	9.13E-08	2.00E-07	1.33E-07	6.15E-09	8.79E-08	2.41E-07	3.05E-07	3.39E-07	3.39E-07	1.18E-04
4032	481500	3625200	Residential	100m grid	1.29E-07	1.83E-07	1.55E-08	1.21E-07	2.08E-07	1.83E-07	9.28E-09	1.20E-07	2.62E-07	1.74E-07	8.07E-09	1.15E-07	3.27E-07	4.00E-07	4.44E-07	4.44E-07	1.55E-04
4033	481600	3625200	Residential	100m grid	1.27E-07	1.85E-07	1.57E-08	1.23E-07	2.11E-07	1.86E-07	9.43E-09	1.22E-07	2.66E-07	1.77E-07	8.21E-09	1.17E-07	3.28E-07	4.06E-07	4.52E-07	4.52E-07	1.57E-04
4034	481700	3625200	Residential	100m grid	1.24E-07	1.83E-07	1.56E-08	1.21E-07	2.09E-07	1.84E-07	9.34E-09	1.21E-07	2.64E-07	1.76E-07	8.13E-09	1.16E-07	3.22E-07	4.03E-07	4.48E-07	4.48E-07	1.56E-04
4035	481800	3625200	Residential	100m grid	1.18E-07	1.77E-07	1.51E-08	1.17E-07	2.03E-07	1.79E-07	9.07E-09	1.17E-07	2.56E-07	1.70E-07	7.89E-09	1.13E-07	3.10E-07	3.91E-07	4.34E-07	4.34E-07	1.51E-04
4036	481900	3625200	Residential	100m grid	1.11E-07	1.69E-07	1.45E-08	1.12E-07	1.94E-07	1.72E-07	8.69E-09	1.12E-07	2.45E-07	1.63E-07	7.57E-09	1.08E-07	2.94E-07	3.75E-07	4.16E-07	4.16E-07	1.45E-04
4037	482000	3625200	Residential	100m grid	1.03E-07	1.61E-07	1.39E-08	1.07E-07	1.86E-07	1.64E-07	8.30E-09	1.07E-07	2.34E-07	1.56E-07	7.22E-09	1.03E-07	2.78E-07	3.58E-07	3.98E-07	3.98E-07	1.39E-04
4038	482100	3625200	Residential	100m grid	9.60E-08	1.53E-07	1.32E-08	1.01E-07	1.77E-07	1.56E-07	7.91E-09	1.02E-07	2.23E-07	1.49E-07	6.88E-09	9.83E-08	2.62E-07	3.41E-07	3.79E-07	3.79E-07	1.32E-04
4039	482200	3625200	Residential	100m grid	8.89E-08	1.45E-07	1.25E-08	9.57E-08	1.67E-07	1.48E-07	7.48E-09	9.66E-08	2.11E-07	1.41E-07	6.51E-09	9.30E-08	2.46E-07	3.23E-07	3.58E-07	3.58E-07	1.25E-04
4040	482300	3625200	Residential	100m grid	8.56E-08	1.38E-07	1.19E-08	9.14E-08	1.60E-07	1.41E-07	7.14E-09	9.22E-08	2.02E-07	1.34E-07	6.21E-09	8.87E-08	2.36E-07	3.08E-07	3.42E-07	3.42E-07	1.19E-04
4041	482400	3625200	Residential	100m grid	8.42E-08	1.33E-07	1.14E-08	8.78E-08	1.53E-07	1.35E-07	6.83E-09	8.83E-08	1.93E-07	1.28E-07	5.95E-09	8.49E-08	2.28E-07	2.95E-07	3.27E-07	3.27E-07	1.14E-04
4042	482500	3625200	Residential	100m grid	8.42E-08	1.28E-07	1.10E-08	8.51E-08	1.47E-07	1.30E-07	6.59E-09	8.51E-08	1.86E-07	1.24E-07	5.73E-09	8.19E-08	2.24E-07	2.84E-07	3.16E-07	3.16E-07	1.10E-04
4078	481700	3625300	Residential	100m grid	1.15E-07	1.69E-07	1.44E-08	1.12E-07	1.92E-07	1.70E-07	8.60E-09	1.11E-07	2.43E-07	1.62E-07	7.48E-09	1.07E-07	2.98E-07	3.71E-07	4.12E-07	4.12E-07	1.43E-04
4079	481800	3625300	Residential	100m grid	1.11E-07	1.63E-07	1.39E-08	1.08E-07	1.86E-07	1.64E-07	8.32E-09	1.08E-07	2.35E-07	1.56E-07	7.24E-09	1.03E-07	2.88E-07	3.59E-07	3.99E-07	3.99E-07	1.39E-04
4080	481900	3625300	Residential	100m grid	1.04E-07	1.55E-07	1.32E-08	1.03E-07	1.77E-07	1.57E-07	7.93E-09	1.02E-07	2.24E-07	1.49E-07	6.90E-09	9.85E-08	2.72E-07	3.42E-07	3.80E-07	3.80E-07	1.32E-04
4081	482000	3625300	Residential	100m grid	9.49E-08	1.46E-07	1.26E-08	9.69E-08	1.68E-07	1.48E-07	7.51E-09	9.71E-08	2.12E-07	1.41E-07	6.54E-09	9.34E-08	2.54E-07	3.24E-07	3.60E-07	3.60E-07	1.25E-04
4082	482100	3625300	Residential	100m grid	8.82E-08	1.40E-07	1.20E-08	9.26E-08	1.61E-07	1.42E-07	7.21E-09	9.31E-08	2.04E-07	1.35E-07	6.27E-09	8.96E-08	2.40E-07	3.11E-07	3.45E-07	3.45E-07	1.20E-04
4083	482200	3625300	Residential	100m grid	8.58E-08	1.36E-07	1.17E-08	9.01E-08	1.57E-07	1.39E-07	7.02E-09	9.07E-08	1.98E-07	1.32E-07	6.11E-09	8.72E-08	2.34E-07	3.03E-07	3.36E-07	3.36E-07	1.17E-04
4084	482300	3625300	Residential	100m grid	8.25E-08	1.31E-07	1.12E-08	8.65E-08	1.51E-07	1.33E-07	6.73E-09	8.70E-08	1.90E-07	1.27E-07	5.86E-09	8.37E-08	2.24E-07	2.90E-07	3.22E-07	3.22E-07	1.12E-04
4085	482400	3625300	Residential	100m grid	7.82E-08	1.23E-07	1.06E-08	8.17E-08	1.42E-07	1.26E-07	6.36E-09	8.22E-08	1.80E-07	1.20E-07	5.54E-09	7.90E-08	2.12E-07	2.74E-07	3.05E-07	3.05E-07	1.06E-04
4086	482500	3625300	Residential	100m grid	7.77E-08	1.19E-07	1.03E-08	7.92E-08	1.37E-07	1.21E-07	6.14E-09	7.93E-08	1.73E-07	1.15E-07	5.34E-09	7.63E-08	2.07E-07	2.65E-07	2.94E-07	2.94E-07	1.02E-04
4123	481800	3625400	Residential	100m grid	1.04E-07	1.51E-07	1.29E-08	1.00E-07	1.72E-07	1.52E-07	7.70E-09	9.95E-08	2.17E-07	1.45E-07	6.70E-09	9.57E-08	2.68E-07	3.32E-07	3.69E-07	3.69E-07	1.28E-04
4124	481900	3625400	Residential	100m grid	9.83E-08	1.45E-07	1.24E-08	9.61E-08	1.65E-07	1.46E-07	7.40E-09	9.56E-08	2.09E-07	1.39E-07	6.44E-09	9.19E-08	2.56E-07	3.19E-07	3.54E-07	3.54E-07	1.23E-04
4125	482000	3625400	Residential	100m grid	9.06E-08	1.37E-07	1.17E-08	9.06E-08	1.57E-07	1.38E-07	7.00E-09	9.05E-08	1.98E-07	1.32E-07	6.10E-09	8.70E-08	2.39E-07	3.02E-07	3.36E-07	3.36E-07	1.17E-04
4126	482100	3625400	Residential	100m grid	8.26E-08	1.28E-07	1.10E-08	8.50E-08	1.48E-07	1.30E-07	6.60E-09	8.53E-08	1.86E-07	1.24E-07	5.75E-09	8.21E-08	2.22E-07	2.85E-07	3.16E-07	3.16E-07	1.10E-04
4127	482200	3625400	Residential	100m grid	7.69E-08	1.22E-07	1.05E-08	8.07E-08	1.41E-07	1.24E-07	6.28E-09	8.12E-08	1.77E-07	1.18E-07	5.47E-09	7.81E-08	2.09E-07	2.71E-07	3.01E-07	3.01E-07	1.05E-04
4128	482300	3625400	Residential	100m grid	7.39E-08	1.18E-07	1.02E-08	7.80E-08	1.36E-07	1.20E-07	6.08E-09	7.85E-08	1.72E-07	1.14E-07	5.29E-09	7.55E-08	2.02E-07	2.62E-07	2.91E-07	2.91E-07	1.01E-04
4129	482400	3625400	Residential	100m grid	7.08E-08	1.12E-07	9.64E-09	7.41E-08	1.29E-07	1.14E-07	5.77E-09	7.45E-08	1.63E-07	1.08E-07	5.02E-09	7.17E-08	1.92E-07	2.49E-07	2.76E-07	2.76E-07	9.63E-05
4130	482500	3625400	Residential	100m grid	7.11E-08	1.10E-07	9.45E-09	7.29E-08	1.27E-07	1.12E-07	5.66E-09	7.31E-08	1.60E-07	1.06E-07	4.92E-09	7.03E-08	1.91E-07	2.44E-07	2.71E-07	2.71E-07	9.44E-05
4131	482600	3625400	Residential	100m grid	7.12E-08	1.07E-07	9.17E-09	7.11E-08	1.23E-07	1.08E-07	5.49E-09	7.09E-08	1.55E-07	1.03E-07	4.78E-09	6.82E-08	1.88E-07	2.37E-07	2.63E-07	2.63E-07	9.16E-05
4132	482700	3625400	Residential	100m grid	7.18E-08	1.05E-07	8.94E-09	6.96E-08	1.20E-07	1.06E-07	5.35E-09	6.92E-08	1.51E-07	1.01E-07	4.66E-09	6.65E-08	1.86E-07	2.31E-07	2.56E-07	2.56E-07	8.93E-05
4133	482800	3625400	Residential	100m grid	7.15E-08	1.02E-07	8.64E-09	6.75E-08	1.16E-07	1.02E-07	5.17E-09	6.68E-08	1.46E-07	9.72E-08	4.50E-09	6.43E-08	1.82E-07	2.23E-07	2.48E-07	2.48E-07	8.63E-05
4134	482900	3625400	Residential	100m grid	7.05E-08	9.81E-08	8.30E-09	6.51E-08	1.11E-07	9.81E-08	4.97E-09	6.42E-08	1.40E-07	9.34E-08	4.32E-09	6.17E-08	1.77E-07	2.14E-07	2.38E-07	2.38E-07	8.29E-05
4135	483000	3625400	Residential	100m grid	6.85E-08	9.34E-08	7.88E-09	6.20E-08	1.05E-07	9.31E-08	4.71E-09	6.09E-08	1.33E-07	8.86E-08	4.10E-09	5.86E-08	1.70E-07	2.03E-07	2.26E-07	2.26E-07	7.87E-05
4136	483100	3625400	Residential	100m grid	6.60E-08	8.94E-08	7.53E-09	5.94E-08	1.01E-07	8.90E-08	4.51E-09	5.83E-08	1.27E-07	8.48E-08	3.92E-09	5.60E-08	1.63E-07	1.94E-07	2.16E-07	2.16E-07	7.52E-05
4137	483200	3625400	Residential	100m grid	6.27E-08	8.54E-08	7.20E-09	5.67E-08	9.64E-08	8.51E-08	4.31E-09	5.57E-08	1.22E-07	8.10E-08	3.75E-09	5.35E-08	1.55E-07	1.86E-07	2.06E-07	2.06E-07	7.19E-05
4138	483300	3625400	Residential	100m grid	5.86E-08	8.09E-08	6.83E-09	5.37E-08	9.15E-08	8.08E-08	4.09E-09	5.29E-08	1.16E-07	7.69E-08	3.56E-09	5.08E-08	1.46E-07	1.76E-07	1.96E-07	1.96E-07	6.83E-05

Legend : Rec = receptor; UTM = universe transverse mercator coordinates; m = meter; HARP = hot spots analysis & reporting program; 3TM = third trimester before birth.

Notes : (1)Unless otherwise noted, all sensitive receptors were conservatively modeled with 30-year residential exposure assumptions (the same as residential receptors).

(2)Infant exposure at the birth center would be brief, so assume 25-year worker exposure conditions.

(3)Cancer risk at Veteran's Village assumes continuous exposure during the third trimester before birth and the first two years after birth.

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	***UTM X (m)***	***UTM Y (m)***	***Receptor Type***	***Receptor Description***	***Resi-dential Cancer Risk Age 3TM-2***	***Resi-dential Cancer Risk Age 2-16***	***Resi-dential Cancer Risk Age 16-30***	***Worker Cancer Risk***	***Resi-dential Cancer Risk Age 3TM-2***	***Resi-dential Cancer Risk Age 2-16***	***Resi-dential Cancer Risk Age 16-30***	***Worker Cancer Risk***	***Resi-dential Cancer Risk Age 3TM-2***	***Resi-dential Cancer Risk Age 2-16***	***Resi-dential Cancer Risk Age 16-30***	***Worker Cancer Risk***	***Cancer Risk, Scenario A***	***Cancer Risk, Scenario B***	***Cancer Risk, Scenario C***	***Max Cancer Risk***	***Max Chronic Hazard Index***
1	480600	3623274	Sensitive(1)	Dewey Child Development Center	1.45E-07	1.22E-07	9.16E-09	8.17E-08	1.26E-07	1.09E-07	5.49E-09	7.14E-08	1.56E-07	1.04E-07	4.78E-09	6.86E-08	2.77E-07	2.40E-07	2.64E-07	2.77E-07	9.23E-05
2	480692	3623201	Sensitive	Dewey Child Development Center	1.67E-07	1.43E-07	1.08E-08	9.56E-08	1.48E-07	1.29E-07	6.46E-09	8.41E-08	1.83E-07	1.22E-07	5.62E-09	8.07E-08	3.21E-07	2.83E-07	3.11E-07	3.21E-07	1.09E-04
3	481288	3624381	Sensitive	Early Learners Children's Academy	3.06E-07	3.50E-07	2.82E-08	2.32E-07	3.87E-07	3.36E-07	1.69E-08	2.20E-07	4.79E-07	3.20E-07	1.47E-08	2.11E-07	6.84E-07	7.40E-07	8.13E-07	8.13E-07	2.84E-04
4	481863	3623567	Sensitive	Harold J. Ballard Parent Center	5.23E-07	1.61E-06	1.46E-07	1.05E-06	2.00E-06	1.74E-06	8.72E-08	1.13E-06	2.47E-06	1.65E-06	7.59E-08	1.09E-06	2.28E-06	3.82E-06	4.20E-06	4.20E-06	1.47E-03
5	482254	3623227	Sensitive	Mission Valley YMCA-Old Town Academy	2.78E-07	8.33E-07	7.52E-08	5.46E-07	1.03E-06	8.97E-07	4.50E-08	5.86E-07	1.28E-06	8.54E-07	3.92E-08	5.63E-07	1.19E-06	1.97E-06	2.17E-06	2.17E-06	7.58E-04
6	480475	3622935	Sensitive	Saint Charles Borromeo Academy Preschool	8.92E-08	7.51E-08	5.62E-09	5.01E-08	7.71E-08	6.70E-08	3.37E-09	4.38E-08	9.54E-08	6.38E-08	2.93E-09	4.21E-08	1.70E-07	1.47E-07	1.62E-07	1.70E-07	5.66E-05
7	480238	3622960	Sensitive	Warren-Walker School Early Learning Center	5.80E-08	5.37E-08	4.12E-09	3.57E-08	5.65E-08	4.91E-08	2.47E-09	3.21E-08	6.99E-08	4.68E-08	2.15E-09	3.08E-08	1.16E-07	1.08E-07	1.19E-07	1.19E-07	4.15E-05
8	481376	3623196	Sensitive(2)	Best-Start Birth Center	4.43E-05	1.06E-05	2.16E-07	7.50E-06	2.96E-06	2.58E-06	1.29E-07	1.69E-06	3.67E-06	2.45E-06	1.13E-07	1.62E-06	7.50E-06	1.69E-06	1.62E-06	7.50E-06	2.65E-02
9	481389	3623215	Sensitive(2)	Best-Start Birth Center	3.53E-05	9.01E-06	2.30E-07	6.36E-06	3.16E-06	2.74E-06	1.38E-07	1.79E-06	3.91E-06	2.61E-06	1.20E-07	1.72E-06	6.36E-06	1.79E-06	1.72E-06	6.36E-06	2.11E-02
10	481134	3623973	Sensitive	San Diego County Psychiatric Hospital	4.27E-07	4.63E-07	3.69E-08	3.07E-07	5.06E-07	4.40E-07	2.21E-08	2.88E-07	6.26E-07	4.19E-07	1.92E-08	2.76E-07	9.27E-07	9.68E-07	1.06E-06	1.06E-06	3.72E-04
11	481167	3624018	Sensitive	San Diego County Psychiatric Hospital	4.49E-07	4.67E-07	3.69E-08	3.10E-07	5.06E-07	4.40E-07	2.21E-08	2.87E-07	6.26E-07	4.19E-07	1.92E-08	2.76E-07	9.53E-07	9.67E-07	1.06E-06	1.06E-06	3.71E-04
12	480600	3623274	Sensitive	Dewey Elementary	1.45E-07	1.22E-07	9.16E-09	8.17E-08	1.26E-07	1.09E-07	5.49E-09	7.14E-08	1.56E-07	1.04E-07	4.78E-09	6.86E-08	2.77E-07	2.40E-07	2.64E-07	2.77E-07	9.23E-05
13	480692	3623201	Sensitive	Dewey Elementary	1.67E-07	1.43E-07	1.08E-08	9.56E-08	1.48E-07	1.29E-07	6.46E-09	8.41E-08	1.83E-07	1.22E-07	5.62E-09	8.07E-08	3.21E-07	2.83E-07	3.11E-07	3.21E-07	1.09E-04
14	481745	3623663	Sensitive	iHigh Virtual Academy	8.04E-07	2.04E-06	1.82E-07	1.34E-06	2.49E-06	2.17E-06	1.09E-07	1.42E-06	3.09E-06	2.06E-06	9.48E-08	1.36E-06	3.02E-06	4.77E-06	5.24E-06	5.24E-06	1.83E-03
15	482254	3623227	Sensitive	Old Town Academy K-8 Charter	2.78E-07	8.33E-07	7.52E-08	5.46E-07	1.03E-06	8.97E-07	4.50E-08	5.86E-07	1.28E-06	8.54E-07	3.92E-08	5.63E-07	1.19E-06	1.97E-06	2.17E-06	2.17E-06	7.58E-04
16	480475	3622935	Sensitive	Saint Charles Borromeo Academy	8.92E-08	7.51E-08	5.62E-09	5.01E-08	7.71E-08	6.70E-08	3.37E-09	4.38E-08	9.54E-08	6.38E-08	2.93E-09	4.21E-08	1.70E-07	1.47E-07	1.62E-07	1.70E-07	5.66E-05
17	481958	3623064	Sensitive(3)	Veterans Village of San Diego	1.87E-06	6.41E-06	5.84E-07	4.20E-06	8.01E-06	6.96E-06	3.50E-07	4.55E-06	9.91E-06	6.63E-06	3.04E-07	4.37E-06	1.87E-06	8.01E-06	9.91E-06	9.91E-06	5.88E-03
18	481941	3623052	Sensitive(3)	Veterans Village of San Diego	2.06E-06	6.17E-06	5.57E-07	4.04E-06	7.64E-06	6.64E-06	3.34E-07	4.34E-06	9.45E-06	6.33E-06	2.90E-07	4.17E-06	2.06E-06	7.64E-06	9.45E-06	9.45E-06	5.61E-03
19	481926	3623036	Sensitive(3)	Veterans Village of San Diego	2.27E-06	5.39E-06	4.78E-07	3.54E-06	6.56E-06	5.70E-06	2.86E-07	3.73E-06	8.11E-06	5.43E-06	2.49E-07	3.58E-06	2.27E-06	6.56E-06	8.11E-06	8.11E-06	4.82E-03
20	481911	3623016	Sensitive(3)	Veterans Village of San Diego	2.48E-06	4.32E-06	3.72E-07	2.85E-06	5.10E-06	4.43E-06	2.23E-07	2.90E-06	6.31E-06	4.22E-06	1.94E-07	2.78E-06	2.48E-06	5.10E-06	6.31E-06	6.31E-06	3.75E-03
502	480975	3622950	Residential	25m grid	3.30E-07	2.51E-07	1.82E-08	1.68E-07	2.50E-07	2.17E-07	1.09E-08	1.42E-07	3.09E-07	2.07E-07	9.49E-09	1.36E-07	5.99E-07	4.78E-07	5.25E-07	5.99E-07	1.97E-04
553	480950	3622975	Residential	25m grid	3.21E-07	2.41E-07	1.74E-08	1.61E-07	2.38E-07	2.07E-07	1.04E-08	1.35E-07	2.95E-07	1.97E-07	9.06E-09	1.30E-07	5.79E-07	4.56E-07	5.01E-07	5.79E-07	1.92E-04
554	480975	3622975	Residential	25m grid	3.51E-07	2.64E-07	1.90E-08	1.76E-07	2.61E-07	2.27E-07	1.14E-08	1.48E-07	3.23E-07	2.16E-07	9.93E-09	1.43E-07	6.34E-07	5.00E-07	5.49E-07	6.34E-07	2.10E-04
606	480900	3623000	Residential	25m grid	2.82E-07	2.11E-07	1.52E-08	1.41E-07	2.09E-07	1.82E-07	9.12E-09	1.19E-07	2.59E-07	1.73E-07	7.94E-09	1.14E-07	5.09E-07	4.00E-07	4.39E-07	5.09E-07	1.69E-04
607	480925	3623000	Residential	25m grid	3.09E-07	2.30E-07	1.66E-08	1.54E-07	2.27E-07	1.98E-07	9.93E-09	1.29E-07	2.82E-07	1.88E-07	8.64E-09	1.24E-07	5.56E-07	4.35E-07	4.78E-07	5.56E-07	1.85E-04
608	480950	3623000	Residential	25m grid	3.39E-07	2.52E-07	1.82E-08	1.69E-07	2.49E-07	2.16E-07	1.09E-08	1.42E-07	3.08E-07	2.06E-07	9.46E-09	1.36E-07	6.09E-07	4.76E-07	5.24E-07	6.09E-07	2.03E-04
609	480975	3623000	Residential	25m grid	3.72E-07	2.77E-07	2.00E-08	1.86E-07	2.74E-07	2.38E-07	1.20E-08	1.56E-07	3.39E-07	2.27E-07	1.04E-08	1.50E-07	6.70E-07	5.24E-07	5.76E-07	6.70E-07	2.23E-04
662	480875	3623025	Residential	25m grid	2.67E-07	2.02E-07	1.47E-08	1.35E-07	2.01E-07	1.75E-07	8.77E-09	1.14E-07	2.49E-07	1.66E-07	7.64E-09	1.10E-07	4.84E-07	3.84E-07	4.23E-07	4.84E-07	1.60E-04
663	480900	3623025	Residential	25m grid	2.93E-07	2.20E-07	1.59E-08	1.47E-07	2.18E-07	1.89E-07	9.51E-09	1.24E-07	2.70E-07	1.80E-07	8.28E-09	1.19E-07	5.28E-07	4.17E-07	4.58E-07	5.28E-07	1.75E-04
664	480925	3623025	Residential	25m grid	3.22E-07	2.40E-07	1.73E-08	1.61E-07	2.38E-07	2.07E-07	1.04E-08	1.35E-07	2.94E-07	1.97E-07	9.03E-09	1.30E-07	5.80E-07	4.55E-07	5.00E-07	5.80E-07	1.93E-04
719	480850	3623050	Residential	25m grid	2.50E-07	1.94E-07	1.42E-08	1.30E-07	1.94E-07	1.69E-07	8.48E-09	1.10E-07	2.41E-07	1.61E-07	7.39E-09	1.06E-07	4.58E-07	3.72E-07	4.09E-07	4.58E-07	1.50E-04
720	480875	3623050	Residential	25m grid	2.74E-07	2.10E-07	1.53E-08	1.41E-07	2.10E-07	1.82E-07	9.16E-09	1.19E-07	2.60E-07	1.74E-07	7.98E-09	1.15E-07	5.00E-07	4.02E-07	4.42E-07	5.00E-07	1.64E-04
721	480900	3623050	Residential	25m grid	3.02E-07	2.29E-07	1.66E-08	1.53E-07	2.28E-07	1.98E-07	9.96E-09	1.30E-07	2.82E-07	1.89E-07	8.67E-09	1.24E-07	5.48E-07	4.36E-07	4.80E-07	5.48E-07	1.81E-04
777	480800	3623075	Residential	25m grid	2.12E-07	1.72E-07	1.27E-08	1.15E-07	1.75E-07	1.52E-07	7.63E-09	9.93E-08	2.16E-07	1.45E-07	6.64E-09	9.54E-08	3.97E-07	3.34E-07	3.68E-07	3.97E-07	1.28E-04
778	480825	3623075	Residential	25m grid	2.32E-07	1.86E-07	1.37E-08	1.24E-07	1.88E-07	1.63E-07	8.21E-09	1.07E-07	2.33E-07	1.56E-07	7.14E-09	1.03E-07	4.31E-07	3.60E-07	3.95E-07	4.31E-07	1.39E-04
779	480850	3623075	Residential	25m grid	2.54E-07	2.01E-07	1.48E-08	1.35E-07	2.03E-07	1.76E-07	8.86E-09	1.15E-07	2.51E-07	1.68E-07	7.71E-09	1.11E-07	4.70E-07	3.88E-07	4.27E-07	4.70E-07	1.52E-04
780	480875	3623075	Residential	25m grid	2.80E-07	2.19E-07	1.60E-08	1.46E-07	2.20E-07	1.91E-07	9.60E-09	1.25E-07	2.72E-07	1.82E-07	8.35E-09	1.20E-07	5.15E-07	4.21E-07	4.62E-07	5.15E-07	1.68E-04
833	480775	3623100	Residential	25m grid	1.97E-07	1.64E-07	1.23E-08	1.10E-07	1.68E-07	1.46E-07	7.35E-09	9.57E-08	2.08E-07	1.39E-07	6.40E-09	9.19E-08	3.73E-07	3.22E-07	3.54E-07	3.73E-07	1.24E-04

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
834	480800	3623100	Residential	25m grid	2.14E-07	1.78E-07	1.32E-08	1.18E-07	1.81E-07	1.58E-07	7.92E-09	1.03E-07	2.25E-07	1.50E-07	6.89E-09	9.90E-08	4.05E-07	3.47E-07	3.82E-07	4.05E-07	1.33E-04
835	480825	3623100	Residential	25m grid	2.35E-07	1.92E-07	1.43E-08	1.28E-07	1.96E-07	1.70E-07	8.56E-09	1.11E-07	2.43E-07	1.62E-07	7.45E-09	1.07E-07	4.41E-07	3.75E-07	4.12E-07	4.41E-07	1.44E-04
886	480750	3623125	Residential	25m grid	1.84E-07	1.57E-07	1.18E-08	1.05E-07	1.62E-07	1.41E-07	7.06E-09	9.19E-08	2.00E-07	1.34E-07	6.14E-09	8.82E-08	3.52E-07	3.09E-07	3.40E-07	3.52E-07	1.19E-04
887	480775	3623125	Residential	25m grid	1.99E-07	1.69E-07	1.27E-08	1.13E-07	1.74E-07	1.52E-07	7.61E-09	9.91E-08	2.16E-07	1.44E-07	6.62E-09	9.51E-08	3.81E-07	3.33E-07	3.67E-07	3.81E-07	1.28E-04
888	480800	3623125	Residential	25m grid	2.17E-07	1.83E-07	1.37E-08	1.22E-07	1.88E-07	1.64E-07	8.23E-09	1.07E-07	2.33E-07	1.56E-07	7.16E-09	1.03E-07	4.15E-07	3.60E-07	3.96E-07	4.15E-07	1.38E-04
934	480725	3623150	Residential	25m grid	1.73E-07	1.49E-07	1.13E-08	9.96E-08	1.54E-07	1.34E-07	6.74E-09	8.77E-08	1.91E-07	1.28E-07	5.87E-09	8.43E-08	3.34E-07	2.95E-07	3.25E-07	3.34E-07	1.13E-04
982	482275	3623150	Residential	25m grid	3.96E-07	1.09E-06	9.75E-08	7.12E-07	1.34E-06	1.16E-06	5.84E-08	7.61E-07	1.66E-06	1.11E-06	5.08E-08	7.30E-07	1.58E-06	2.56E-06	2.81E-06	2.81E-06	9.83E-04
983	480725	3623175	Residential	25m grid	1.78E-07	1.54E-07	1.16E-08	1.02E-07	1.59E-07	1.38E-07	6.93E-09	9.02E-08	1.96E-07	1.31E-07	6.03E-09	8.66E-08	3.43E-07	3.04E-07	3.34E-07	3.43E-07	1.17E-04
1168	482250	3623250	Residential	25m grid	2.45E-07	7.44E-07	6.73E-08	4.87E-07	9.23E-07	8.02E-07	4.03E-08	5.24E-07	1.14E-06	7.64E-07	3.51E-08	5.04E-07	1.06E-06	1.76E-06	1.94E-06	1.94E-06	6.78E-04
1209	482175	3623275	Residential	25m grid	2.83E-07	9.40E-07	8.54E-08	6.15E-07	1.17E-06	1.02E-06	5.11E-08	6.66E-07	1.45E-06	9.70E-07	4.45E-08	6.39E-07	1.31E-06	2.24E-06	2.46E-06	2.46E-06	8.61E-04
1210	482200	3623275	Residential	25m grid	2.60E-07	8.37E-07	7.59E-08	5.48E-07	1.04E-06	9.05E-07	4.55E-08	5.92E-07	1.29E-06	8.62E-07	3.96E-08	5.68E-07	1.17E-06	1.99E-06	2.19E-06	2.19E-06	7.65E-04
1211	482225	3623275	Residential	25m grid	2.36E-07	7.42E-07	6.72E-08	4.86E-07	9.21E-07	8.01E-07	4.02E-08	5.24E-07	1.14E-06	7.63E-07	3.50E-08	5.03E-07	1.05E-06	1.76E-06	1.94E-06	1.94E-06	6.77E-04
1246	482125	3623300	Residential	25m grid	3.04E-07	1.08E-06	9.89E-08	7.09E-07	1.36E-06	1.18E-06	5.92E-08	7.71E-07	1.68E-06	1.12E-06	5.16E-08	7.41E-07	1.49E-06	2.60E-06	2.85E-06	2.85E-06	9.97E-04
1247	482150	3623300	Residential	25m grid	2.82E-07	9.74E-07	8.87E-08	6.37E-07	1.22E-06	1.06E-06	5.31E-08	6.91E-07	1.51E-06	1.01E-06	4.62E-08	6.64E-07	1.34E-06	2.33E-06	2.56E-06	2.56E-06	8.93E-04
1248	482175	3623300	Residential	25m grid	2.49E-07	8.29E-07	7.54E-08	5.43E-07	1.03E-06	8.98E-07	4.51E-08	5.88E-07	1.28E-06	8.56E-07	3.93E-08	5.64E-07	1.15E-06	1.98E-06	2.17E-06	2.17E-06	7.59E-04
1249	482200	3623300	Residential	25m grid	2.24E-07	7.25E-07	6.58E-08	4.75E-07	9.02E-07	7.85E-07	3.94E-08	5.13E-07	1.12E-06	7.47E-07	3.43E-08	4.93E-07	1.02E-06	1.73E-06	1.90E-06	1.90E-06	6.63E-04
1284	482100	3623325	Residential	25m grid	3.04E-07	1.13E-06	1.03E-07	7.36E-07	1.41E-06	1.23E-06	6.16E-08	8.02E-07	1.75E-06	1.17E-06	5.36E-08	7.70E-07	1.53E-06	2.70E-06	2.97E-06	2.97E-06	1.04E-03
1285	482125	3623325	Residential	25m grid	2.68E-07	9.50E-07	8.66E-08	6.21E-07	1.19E-06	1.03E-06	5.19E-08	6.76E-07	1.47E-06	9.84E-07	4.52E-08	6.49E-07	1.31E-06	2.27E-06	2.50E-06	2.50E-06	8.73E-04
1286	482150	3623325	Residential	25m grid	2.40E-07	8.20E-07	7.47E-08	5.37E-07	1.02E-06	8.90E-07	4.47E-08	5.82E-07	1.27E-06	8.48E-07	3.89E-08	5.59E-07	1.13E-06	1.96E-06	2.15E-06	2.15E-06	7.52E-04
1287	482175	3623325	Residential	25m grid	2.21E-07	7.32E-07	6.65E-08	4.79E-07	9.12E-07	7.93E-07	3.98E-08	5.18E-07	1.13E-06	7.55E-07	3.47E-08	4.98E-07	1.02E-06	1.74E-06	1.92E-06	1.92E-06	6.70E-04
1325	482100	3623350	Residential	25m grid	2.90E-07	1.06E-06	9.65E-08	6.91E-07	1.32E-06	1.15E-06	5.78E-08	7.53E-07	1.64E-06	1.10E-06	5.03E-08	7.23E-07	1.44E-06	2.53E-06	2.79E-06	2.79E-06	9.73E-04
1326	482125	3623350	Residential	25m grid	2.47E-07	8.61E-07	7.84E-08	5.63E-07	1.08E-06	9.35E-07	4.70E-08	6.12E-07	1.33E-06	8.91E-07	4.09E-08	5.87E-07	1.19E-06	2.06E-06	2.26E-06	2.26E-06	7.90E-04
1327	482150	3623350	Residential	25m grid	2.20E-07	7.44E-07	6.77E-08	4.87E-07	9.28E-07	8.07E-07	4.05E-08	5.28E-07	1.15E-06	7.69E-07	3.53E-08	5.07E-07	1.03E-06	1.78E-06	1.95E-06	1.95E-06	6.82E-04
1328	482175	3623350	Residential	25m grid	2.06E-07	6.72E-07	6.10E-08	4.40E-07	8.37E-07	7.28E-07	3.65E-08	4.76E-07	1.04E-06	6.93E-07	3.18E-08	4.57E-07	9.39E-07	1.60E-06	1.76E-06	1.76E-06	6.15E-04
1367	482075	3623375	Residential	25m grid	2.94E-07	1.09E-06	9.93E-08	7.11E-07	1.36E-06	1.18E-06	5.95E-08	7.75E-07	1.69E-06	1.13E-06	5.18E-08	7.44E-07	1.48E-06	2.61E-06	2.87E-06	2.87E-06	1.00E-03
1368	482100	3623375	Residential	25m grid	2.77E-07	9.85E-07	8.98E-08	6.44E-07	1.23E-06	1.07E-06	5.38E-08	7.00E-07	1.53E-06	1.02E-06	4.68E-08	6.73E-07	1.35E-06	2.36E-06	2.59E-06	2.59E-06	9.05E-04
1369	482125	3623375	Residential	25m grid	2.42E-07	8.25E-07	7.51E-08	5.40E-07	1.03E-06	8.95E-07	4.49E-08	5.85E-07	1.27E-06	8.52E-07	3.91E-08	5.62E-07	1.14E-06	1.97E-06	2.17E-06	2.17E-06	7.56E-04
1370	482150	3623375	Residential	25m grid	2.11E-07	6.96E-07	6.32E-08	4.55E-07	8.66E-07	7.53E-07	3.78E-08	4.93E-07	1.07E-06	7.17E-07	3.29E-08	4.73E-07	9.70E-07	1.66E-06	1.82E-06	1.82E-06	6.37E-04
1411	482075	3623400	Residential	25m grid	2.83E-07	1.01E-06	9.23E-08	6.62E-07	1.27E-06	1.10E-06	5.53E-08	7.20E-07	1.57E-06	1.05E-06	4.81E-08	6.91E-07	1.39E-06	2.42E-06	2.66E-06	2.66E-06	9.30E-04
1412	482100	3623400	Residential	25m grid	2.66E-07	9.17E-07	8.35E-08	6.00E-07	1.14E-06	9.95E-07	5.00E-08	6.51E-07	1.42E-06	9.48E-07	4.35E-08	6.25E-07	1.27E-06	2.19E-06	2.41E-06	2.41E-06	8.41E-04
1413	482125	3623400	Residential	25m grid	2.42E-07	8.02E-07	7.29E-08	5.25E-07	9.99E-07	8.69E-07	4.36E-08	5.68E-07	1.24E-06	8.28E-07	3.80E-08	5.46E-07	1.12E-06	1.91E-06	2.10E-06	2.10E-06	7.34E-04
1456	482075	3623425	Residential	25m grid	2.76E-07	9.47E-07	8.62E-08	6.20E-07	1.18E-06	1.03E-06	5.16E-08	6.72E-07	1.46E-06	9.80E-07	4.50E-08	6.46E-07	1.31E-06	2.26E-06	2.49E-06	2.49E-06	8.69E-04
1457	482100	3623425	Residential	25m grid	2.59E-07	8.57E-07	7.78E-08	5.61E-07	1.07E-06	9.28E-07	4.66E-08	6.07E-07	1.32E-06	8.84E-07	4.06E-08	5.83E-07	1.19E-06	2.04E-06	2.25E-06	2.25E-06	7.84E-04
1490	481825	3623450	Residential	25m grid	6.15E-07	2.99E-06	2.77E-07	1.95E-06	3.80E-06	3.30E-06	1.66E-07	2.16E-06	4.70E-06	3.14E-06	1.44E-07	2.07E-06	3.88E-06	7.26E-06	7.98E-06	7.98E-06	2.79E-03
1491	481850	3623450	Residential	25m grid	5.61E-07	2.62E-06	2.42E-07	1.71E-06	3.32E-06	2.89E-06	1.45E-07	1.89E-06	4.11E-06	2.75E-06	1.26E-07	1.81E-06	3.43E-06	6.36E-06	6.99E-06	6.99E-06	2.44E-03
1500	482075	3623450	Residential	25m grid	2.70E-07	8.87E-07	8.05E-08	5.80E-07	1.10E-06	9.60E-07	4.82E-08	6.28E-07	1.37E-06	9.14E-07	4.20E-08	6.03E-07	1.24E-06	2.11E-06	2.32E-06	2.32E-06	8.11E-04
1535	481850	3623475	Residential	25m grid	5.52E-07	2.37E-06	2.19E-07	1.55E-06	3.00E-06	2.61E-06	1.31E-07	1.70E-06	3.71E-06	2.48E-06	1.14E-07	1.64E-06	3.14E-06	5.74E-06	6.31E-06	6.31E-06	2.20E-03
1536	481875	3623475	Residential	25m grid	5.04E-07	2.10E-06	1.93E-07	1.37E-06	2.64E-06	2.30E-06	1.15E-07	1.50E-06	3.27E-06	2.19E-06	1.00E-07	1.44E-06	2.79E-06	5.06E-06	5.56E-06	5.56E-06	1.94E-03
1579	481850	3623500	Residential	25m grid	5.50E-07	2.18E-06	2.00E-07	1.43E-06	2.74E-06	2.39E-06	1.20E-07	1.56E-06	3.40E-06	2.27E-06	1.04E-07	1.50E-06	2.93E-06	5.25E-06	5.77E-06	5.77E-06	2.02E-03
1580	481875	3623500	Residential	25m grid	5.01E-07	1.92E-06	1.76E-07	1.26E-06	2.42E-06	2.10E-06	1.06E-07	1.37E-06	2.99E-06	2.00E-06	9.19E-08	1.32E-06	2.60E-06	4.62E-06	5.08E-06	5.08E-06	1.78E-03
1585	482000	3623500	Residential	25m grid	3.25E-07	1.06E-06	9.60E-08	6.92E-07	1.32E-06	1.14E-06	5.75E-08	7.48E-07	1.63E-06	1.09E-06	5.00E-08	7.18E-07	1.48E-06	2.52E-06	2.77E-06	2.77E-06	9.67E-04
1586	482025	3623500	Residential	25m grid	3.03E-07	9.53E-07	8.63E-08	6.24E-07	1.18E-06	1.03E-06	5.17E-08	6.73E-07	1.46E-06	9.80E-07	4.50E-08	6.46E-07	1.34E-06	2.26E-06	2.49E-06	2.49E-06	8.70E-04
1587	482050	3623500	Residential	25m grid	2.83E-07	8.63E-07	7.80E-08	5.65E-07	1.07E-06	9.30E-07	4.67E-08	6.08E-07	1.32E-06	8.86E-07	4.07E-08	5.84E-07	1.22E-06	2.05E-06	2.25E-06	2.25E-06	7.86E-04
1622	481825	3623525	Residential	25m grid	6.05E-07	2.26E-06	2.07E-07	1.48E-06	2.84E-06	2.47E-06	1.24E-07	1.61E-06	3.51E-06	2.35E-06	1.08E-07	1.55E-06	3.07E-06	5.43E-06	5.97E-06	5.97E-06	2.08E-03
1623	481850	3623525	Residential	25m grid	5.51E-07	2.01E-06	1.83E-07	1.31E-06	2.51E-06	2.19E-06	1.10E-07	1.43E-06	3.11E-06	2.08E-06	9.56E-08	1.37E-06	2.74E-06	4.81E-06	5.29E-06	5.29E-06	1.85E-03
1624	481875	3623525	Residential	25m grid	5.01E-07	1.77E-06	1.62E-07	1.16E-06	2.22E-06	1.93E-06	9.69E-08	1.26E-06	2.75E-06	1.84E-06	8.44E-08	1.21E-06	2.44E-06	4.25E-06	4.67E-06	4.67E-06	1.63E-03
1625	481900	3623525	Residential	25m grid	4.58E-07	1.57E-06	1.43E-07	1.03E-06	1.97E-06	1.71E-06	8.58E-08	1.12E-06	2.43E-06	1.63E-06	7.47E-08	1.07E-06	2.17E-06	3.76E-06	4.13E-06	4.13E-06	1.44E-03
1626	481925	3623525	Residential	25m grid	4.19E-07	1.40E-06	1.27E-07	9.17E-07	1.75E-06	1.52E-06	7.63E-08	9.94E-07	2.16E-06	1.45E-06	6.64E-08	9.54E-07	1.95E-06	3.34E-06	3.68E-06	3.68E-06	1.28E-03
1629	482000	3623525	Residential	25m grid	3.21E-07	9.76E-07	8.82E-08	6.39E-07	1.21E-06	1.05E-06	5.28E-08	6.88E-07	1.50E-06	1.00E-06	4.60E-08	6.60E-07	1.39E-06	2.31E-06	2.54E-06	2.54E-06	8.89E-04
1630	482025	3623525	Residential	25m grid	2.96E-07	8.73E-07	7.88E-08	5.72E-07	1.08E-06	9.39E-07	4.72E-08	6.14E-07	1.34E-06	8.95E-07	4.11E-08	5.90E-07	1.25E-06	2.07E-06	2.27E-06	2.27E-06	7.94E-04
1666	481825	3623550	Residential	25m grid	6.11E-07	2.09E-06	1.90E-07	1.37E-06	2.60E-06	2.26E-06	1.14E-07	1.48E-06	3.22E-06	2.16E-06	9.90E-08	1.42E-06	2.89E-06	4.98E-06	5.48E-06	5.48E-06	1.91E-03
1667	481850	3623550	Residential	25m grid	5.51E-07	1.83E-06	1.67E-07	1.20E-06	2.28E-06	1.99E-06	9.98E-08	1.30E-06	2.83E-06	1.89E-06	8.68E-08	1.25E-06	2.55E-06	4.37E-06	4.81E-06	4.81E-06	1.68E-03
1831	481200	3623650	Residential	25m grid	1.28E-06	1.52E-06	1.23E-07	1.01E-06	1.69E-06	1.47E-06	7.37E-08	9.60E-07	2.09E-06	1.40E-06	6.42E-08	9.22E-07	2.92E-06	3.23E-06	3.55E-06	3.55E-06	1.24E-03
1832	481225	3623650	Residential	25m grid	1.50E-06	1.61E-06	1.28E-07	1.07E-06	1.76E-06	1.53E-06	7.68E-08	1.00E-06	2.18E-06	1.46E-06	6.69E-08	9.60E-07	3.24E-06	3.37E-06	3.70E-06	3.70E-06	1.29E-03

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
1839	481625	3623650	Residential	25m grid	1.13E-06	3.72E-06	3.38E-07	2.43E-06	4.63E-06	4.03E-06	2.02E-07	2.63E-06	5.74E-06	3.84E-06	1.76E-07	2.53E-06	5.19E-06	8.87E-06	9.75E-06	9.75E-06	3.40E-03
1840	481650	3623650	Residential	25m grid	1.06E-06	3.23E-06	2.92E-07	2.11E-06	4.00E-06	3.48E-06	1.75E-07	2.28E-06	4.96E-06	3.32E-06	1.52E-07	2.19E-06	4.58E-06	7.66E-06	8.42E-06	8.42E-06	2.94E-03
1841	481675	3623650	Residential	25m grid	9.98E-07	2.94E-06	2.65E-07	1.93E-06	3.64E-06	3.16E-06	1.59E-07	2.07E-06	4.50E-06	3.01E-06	1.38E-07	1.99E-06	4.20E-06	6.96E-06	7.65E-06	7.65E-06	2.67E-03
1852	480550	3623675	Residential	25m grid	7.97E-08	1.07E-07	8.87E-09	7.08E-08	1.22E-07	1.06E-07	5.31E-09	6.92E-08	1.51E-07	1.01E-07	4.63E-09	6.64E-08	1.96E-07	2.33E-07	2.56E-07	2.56E-07	8.94E-05
1878	481200	3623675	Residential	25m grid	1.18E-06	1.40E-06	1.13E-07	9.27E-07	1.56E-06	1.35E-06	6.80E-08	8.85E-07	1.93E-06	1.29E-06	5.92E-08	8.50E-07	2.70E-06	2.98E-06	3.27E-06	3.27E-06	1.14E-03
1879	481225	3623675	Residential	25m grid	1.36E-06	1.52E-06	1.22E-07	1.01E-06	1.67E-06	1.45E-06	7.28E-08	9.47E-07	2.06E-06	1.38E-06	6.33E-08	9.10E-07	3.00E-06	3.19E-06	3.51E-06	3.51E-06	1.22E-03
1886	481625	3623675	Residential	25m grid	1.05E-06	3.18E-06	2.87E-07	2.08E-06	3.94E-06	3.42E-06	1.72E-07	2.24E-06	4.87E-06	3.26E-06	1.50E-07	2.15E-06	4.52E-06	7.53E-06	8.28E-06	8.28E-06	2.89E-03
1887	481650	3623675	Residential	25m grid	9.90E-07	2.78E-06	2.50E-07	1.82E-06	3.43E-06	2.98E-06	1.50E-07	1.95E-06	4.24E-06	2.84E-06	1.30E-07	1.87E-06	4.02E-06	6.56E-06	7.21E-06	7.21E-06	2.52E-03
1888	481675	3623675	Residential	25m grid	9.35E-07	2.49E-06	2.23E-07	1.63E-06	3.06E-06	2.66E-06	1.33E-07	1.74E-06	3.78E-06	2.53E-06	1.16E-07	1.67E-06	3.65E-06	5.85E-06	6.43E-06	6.43E-06	2.25E-03
1889	481700	3623675	Residential	25m grid	8.94E-07	2.33E-06	2.08E-07	1.53E-06	2.86E-06	2.48E-06	1.25E-07	1.62E-06	3.53E-06	2.36E-06	1.09E-07	1.56E-06	3.43E-06	5.46E-06	6.01E-06	6.01E-06	2.10E-03
1898	480525	3623700	Residential	25m grid	7.44E-08	9.90E-08	8.19E-09	6.54E-08	1.12E-07	9.76E-08	4.90E-09	6.38E-08	1.39E-07	9.30E-08	4.27E-09	6.13E-08	1.82E-07	2.15E-07	2.36E-07	2.36E-07	8.25E-05
1899	480550	3623700	Residential	25m grid	7.72E-08	1.04E-07	8.57E-09	6.84E-08	1.18E-07	1.02E-07	5.14E-09	6.69E-08	1.46E-07	9.74E-08	4.47E-09	6.42E-08	1.89E-07	2.25E-07	2.47E-07	2.47E-07	8.64E-05
1900	480575	3623700	Residential	25m grid	8.01E-08	1.08E-07	9.00E-09	7.16E-08	1.23E-07	1.07E-07	5.39E-09	7.01E-08	1.53E-07	1.02E-07	4.69E-09	6.73E-08	1.98E-07	2.36E-07	2.60E-07	2.60E-07	9.06E-05
1926	481225	3623700	Residential	25m grid	1.25E-06	1.44E-06	1.17E-07	9.57E-07	1.60E-06	1.39E-06	6.98E-08	9.09E-07	1.98E-06	1.32E-06	6.07E-08	8.72E-07	2.81E-06	3.06E-06	3.36E-06	3.36E-06	1.17E-03
1932	481600	3623700	Residential	25m grid	1.04E-06	3.17E-06	2.86E-07	2.07E-06	3.93E-06	3.41E-06	1.72E-07	2.23E-06	4.86E-06	3.25E-06	1.49E-07	2.14E-06	4.49E-06	7.51E-06	8.26E-06	8.26E-06	2.89E-03
1933	481625	3623700	Residential	25m grid	9.84E-07	2.75E-06	2.47E-07	1.80E-06	3.39E-06	2.95E-06	1.48E-07	1.93E-06	4.20E-06	2.81E-06	1.29E-07	1.85E-06	3.98E-06	6.49E-06	7.14E-06	7.14E-06	2.49E-03
1934	481650	3623700	Residential	25m grid	9.34E-07	2.44E-06	2.18E-07	1.60E-06	2.99E-06	2.60E-06	1.30E-07	1.70E-06	3.70E-06	2.47E-06	1.13E-07	1.63E-06	3.59E-06	5.71E-06	6.28E-06	6.28E-06	2.19E-03
1935	481675	3623700	Residential	25m grid	8.86E-07	2.19E-06	1.95E-07	1.44E-06	2.67E-06	2.32E-06	1.17E-07	1.52E-06	3.31E-06	2.21E-06	1.02E-07	1.46E-06	3.27E-06	5.11E-06	5.62E-06	5.62E-06	1.96E-03
1936	481700	3623700	Residential	25m grid	8.54E-07	2.07E-06	1.84E-07	1.36E-06	2.52E-06	2.19E-06	1.10E-07	1.43E-06	3.12E-06	2.09E-06	9.57E-08	1.38E-06	3.10E-06	4.82E-06	5.30E-06	5.30E-06	1.85E-03
1944	480550	3623725	Residential	25m grid	7.49E-08	9.99E-08	8.26E-09	6.60E-08	1.13E-07	9.85E-08	4.95E-09	6.44E-08	1.40E-07	9.38E-08	4.31E-09	6.19E-08	1.83E-07	2.17E-07	2.38E-07	2.38E-07	8.32E-05
1945	480575	3623725	Residential	25m grid	7.76E-08	1.04E-07	8.65E-09	6.90E-08	1.19E-07	1.03E-07	5.18E-09	6.75E-08	1.47E-07	9.83E-08	4.51E-09	6.48E-08	1.91E-07	2.27E-07	2.50E-07	2.50E-07	8.72E-05
1977	481575	3623725	Residential	25m grid	1.01E-06	3.15E-06	2.85E-07	2.06E-06	3.91E-06	3.40E-06	1.71E-07	2.22E-06	4.84E-06	3.24E-06	1.49E-07	2.13E-06	4.44E-06	7.48E-06	8.22E-06	8.22E-06	2.87E-03
1978	481600	3623725	Residential	25m grid	9.63E-07	2.73E-06	2.45E-07	1.79E-06	3.36E-06	2.92E-06	1.47E-07	1.91E-06	4.16E-06	2.79E-06	1.28E-07	1.84E-06	3.94E-06	6.43E-06	7.08E-06	7.08E-06	2.47E-03
1979	481625	3623725	Residential	25m grid	9.21E-07	2.40E-06	2.15E-07	1.57E-06	2.94E-06	2.56E-06	1.29E-07	1.67E-06	3.64E-06	2.44E-06	1.12E-07	1.61E-06	3.54E-06	5.63E-06	6.19E-06	6.19E-06	2.16E-03
1980	481650	3623725	Residential	25m grid	8.79E-07	2.14E-06	1.90E-07	1.41E-06	2.61E-06	2.27E-06	1.14E-07	1.49E-06	3.23E-06	2.16E-06	9.93E-08	1.43E-06	3.21E-06	5.00E-06	5.50E-06	5.50E-06	1.92E-03
1981	481675	3623725	Residential	25m grid	8.40E-07	1.94E-06	1.72E-07	1.28E-06	2.36E-06	2.05E-06	1.03E-07	1.34E-06	2.92E-06	1.95E-06	8.96E-08	1.29E-06	2.96E-06	4.51E-06	4.96E-06	4.96E-06	1.73E-03
1982	481700	3623725	Residential	25m grid	8.06E-07	1.80E-06	1.58E-07	1.18E-06	2.17E-06	1.89E-06	9.48E-08	1.23E-06	2.69E-06	1.80E-06	8.26E-08	1.19E-06	2.76E-06	4.16E-06	4.57E-06	4.57E-06	1.60E-03
1983	481725	3623725	Residential	25m grid	7.76E-07	1.70E-06	1.50E-07	1.12E-06	2.06E-06	1.79E-06	8.99E-08	1.17E-06	2.55E-06	1.71E-06	7.83E-08	1.12E-06	2.63E-06	3.94E-06	4.33E-06	4.33E-06	1.51E-03
2022	481575	3623750	Residential	25m grid	9.32E-07	2.69E-06	2.42E-07	1.76E-06	3.32E-06	2.89E-06	1.45E-07	1.89E-06	4.11E-06	2.75E-06	1.26E-07	1.81E-06	3.86E-06	6.35E-06	6.98E-06	6.98E-06	2.44E-03
2023	481600	3623750	Residential	25m grid	8.96E-07	2.36E-06	2.11E-07	1.55E-06	2.90E-06	2.52E-06	1.26E-07	1.65E-06	3.58E-06	2.40E-06	1.10E-07	1.58E-06	3.47E-06	5.54E-06	6.09E-06	6.09E-06	2.13E-03
2024	481625	3623750	Residential	25m grid	8.62E-07	2.11E-06	1.87E-07	1.38E-06	2.57E-06	2.23E-06	1.12E-07	1.46E-06	3.18E-06	2.13E-06	9.77E-08	1.40E-06	3.16E-06	4.92E-06	5.41E-06	5.41E-06	1.89E-03
2025	481650	3623750	Residential	25m grid	8.28E-07	1.90E-06	1.68E-07	1.25E-06	2.31E-06	2.01E-06	1.01E-07	1.31E-06	2.86E-06	1.91E-06	8.77E-08	1.26E-06	2.90E-06	4.41E-06	4.85E-06	4.85E-06	1.70E-03
2026	481675	3623750	Residential	25m grid	7.97E-07	1.74E-06	1.53E-07	1.14E-06	2.10E-06	1.83E-06	9.17E-08	1.19E-06	2.60E-06	1.74E-06	7.99E-08	1.15E-06	2.69E-06	4.02E-06	4.42E-06	4.42E-06	1.54E-03
2027	481700	3623750	Residential	25m grid	7.66E-07	1.61E-06	1.41E-07	1.06E-06	1.94E-06	1.69E-06	8.47E-08	1.10E-06	2.40E-06	1.61E-06	7.37E-08	1.06E-06	2.52E-06	3.71E-06	4.08E-06	4.08E-06	1.43E-03
2028	481725	3623750	Residential	25m grid	7.38E-07	1.53E-06	1.34E-07	1.00E-06	1.83E-06	1.59E-06	8.01E-08	1.04E-06	2.27E-06	1.52E-06	6.97E-08	1.00E-06	2.40E-06	3.51E-06	3.86E-06	3.86E-06	1.35E-03
2029	481750	3623750	Residential	25m grid	6.99E-07	1.40E-06	1.22E-07	9.21E-07	1.68E-06	1.46E-06	7.33E-08	9.54E-07	2.08E-06	1.39E-06	6.38E-08	9.16E-07	2.22E-06	3.21E-06	3.53E-06	3.53E-06	1.23E-03
2065	481575	3623775	Residential	25m grid	8.66E-07	2.31E-06	2.07E-07	1.51E-06	2.84E-06	2.47E-06	1.24E-07	1.61E-06	3.51E-06	2.35E-06	1.08E-07	1.55E-06	3.38E-06	5.43E-06	5.97E-06	5.97E-06	2.09E-03
2066	481600	3623775	Residential	25m grid	8.35E-07	2.06E-06	1.83E-07	1.35E-06	2.51E-06	2.18E-06	1.10E-07	1.43E-06	3.11E-06	2.08E-06	9.55E-08	1.37E-06	3.08E-06	4.81E-06	5.28E-06	5.28E-06	1.85E-03
2067	481625	3623775	Residential	25m grid	8.07E-07	1.86E-06	1.65E-07	1.22E-06	2.26E-06	1.96E-06	9.86E-08	1.28E-06	2.79E-06	1.87E-06	8.58E-08	1.23E-06	2.83E-06	4.32E-06	4.75E-06	4.75E-06	1.66E-03
2068	481650	3623775	Residential	25m grid	7.79E-07	1.70E-06	1.49E-07	1.12E-06	2.05E-06	1.78E-06	8.95E-08	1.17E-06	2.54E-06	1.70E-06	7.79E-08	1.12E-06	2.63E-06	3.92E-06	4.31E-06	4.31E-06	1.51E-03
2069	481675	3623775	Residential	25m grid	7.54E-07	1.57E-06	1.38E-07	1.03E-06	1.89E-06	1.64E-06	8.24E-08	1.07E-06	2.33E-06	1.56E-06	7.17E-08	1.03E-06	2.46E-06	3.61E-06	3.97E-06	3.97E-06	1.39E-03
2070	481700	3623775	Residential	25m grid	7.28E-07	1.46E-06	1.27E-07	9.59E-07	1.75E-06	1.52E-06	7.63E-08	9.93E-07	2.16E-06	1.45E-06	6.64E-08	9.54E-07	2.31E-06	3.34E-06	3.68E-06	3.68E-06	1.28E-03
2071	481725	3623775	Residential	25m grid	6.97E-07	1.35E-06	1.18E-07	8.89E-07	1.61E-06	1.40E-06	7.04E-08	9.17E-07	2.00E-06	1.34E-06	6.13E-08	8.80E-07	2.17E-06	3.08E-06	3.39E-06	3.39E-06	1.18E-03
2072	481750	3623775	Residential	25m grid	6.64E-07	1.25E-06	1.08E-07	8.22E-07	1.49E-06	1.29E-06	6.49E-08	8.44E-07	1.84E-06	1.23E-06	5.65E-08	8.11E-07	2.02E-06	2.84E-06	3.12E-06	3.12E-06	1.09E-03
2106	481575	3623800	Residential	25m grid	8.07E-07	2.01E-06	1.79E-07	1.32E-06	2.45E-06	2.13E-06	1.07E-07	1.39E-06	3.04E-06	2.03E-06	9.32E-08	1.34E-06	2.99E-06	4.69E-06	5.16E-06	5.16E-06	1.80E-03
2107	481600	3623800	Residential	25m grid	7.81E-07	1.82E-06	1.61E-07	1.19E-06	2.21E-06	1.92E-06	9.64E-08	1.26E-06	2.73E-06	1.83E-06	8.39E-08	1.21E-06	2.76E-06	4.23E-06	4.65E-06	4.65E-06	1.62E-03
2108	481625	3623800	Residential	25m grid	7.57E-07	1.66E-06	1.47E-07	1.09E-06	2.01E-06	1.75E-06	8.78E-08	1.14E-06	2.49E-06	1.66E-06	7.64E-08	1.10E-06	2.57E-06	3.84E-06	4.23E-06	4.23E-06	1.48E-03
2109	481650	3623800	Residential	25m grid	7.34E-07	1.53E-06	1.35E-07	1.01E-06	1.85E-06	1.60E-06	8.06E-08	1.05E-06	2.28E-06	1.53E-06	7.01E-08	1.01E-06	2.40E-06	3.53E-06	3.88E-06	3.88E-06	1.36E-03
2110	481675	3623800	Residential	25m grid	7.12E-07	1.43E-06	1.24E-07	9.37E-07	1.71E-06	1.48E-06	7.45E-08	9.70E-07	2.11E-06	1.41E-06	6.49E-08	9.32E-07	2.26E-06	3.27E-06	3.59E-06	3.59E-06	1.25E-03
2111	481700	3623800	Residential	25m grid	6.88E-07	1.33E-06	1.15E-07	8.73E-07	1.58E-06	1.38E-06	6.91E-08	9.00E-07	1.96E-06	1.31E-06	6.02E-08	8.64E-07	2.13E-06	3.03E-06	3.33E-06	3.33E-06	1.16E-03
2112	481725	3623800	Residential	25m grid	6.62E-07	1.23E-06	1.07E-07	8.12E-07	1.47E-06	1.27E-06	6.40E-08	8.33E-07	1.81E-06	1.21E-06	5.57E-08	8.00E-07	2.00E-06	2.80E-06	3.08E-06	3.08E-06	1.08E-03
2113	481750	3623800	Residential	25m grid	6.32E-07	1.14E-06	9.87E-08	7.53E-07	1.35E-06	1.18E-06	5.91E-08	7.70E-07	1.68E-06	1.12E-06	5.15E-08	7.39E-07	1.87E-06	2.59E-06	2.85E-06	2.85E-06	9.95E-04
2146	481550	3623825	Residential	25m grid	7.80E-07	1.94E-06	1.73E-07	1.27E-06	2.37E-06	2.06E-06	1.04E-07	1.35E-06	2.94E-06	1.97E-06	9.02E-08	1.30E-06	2.90E-06	4.54E-06	4.99E-06	4.99E-06	1.74E-03
2147	481575	3623825	Residential	25m grid	7.54E-07	1.77E-06	1.57E-07	1.16E-06	2.15E-06	1.87E-06	9.40E-08	1.22E-06	2.66E-06	1.78E-06	8.18E-08	1.18E-06	2.68E-06	4.12E-06	4.53E-06	4.53E-06	1.58E-03

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
2148	481600	3623825	Residential	25m grid	7.32E-07	1.63E-06	1.44E-07	1.07E-06	1.97E-06	1.72E-06	8.62E-08	1.12E-06	2.44E-06	1.63E-06	7.50E-08	1.08E-06	2.51E-06	3.78E-06	4.15E-06	4.15E-06	1.45E-03
2149	481625	3623825	Residential	25m grid	7.12E-07	1.51E-06	1.33E-07	9.92E-07	1.82E-06	1.58E-06	7.94E-08	1.03E-06	2.25E-06	1.51E-06	6.91E-08	9.92E-07	2.35E-06	3.48E-06	3.83E-06	3.83E-06	1.34E-03
2150	481650	3623825	Residential	25m grid	6.92E-07	1.40E-06	1.23E-07	9.23E-07	1.68E-06	1.46E-06	7.35E-08	9.57E-07	2.08E-06	1.39E-06	6.40E-08	9.19E-07	2.22E-06	3.22E-06	3.54E-06	3.54E-06	1.24E-03
2151	481675	3623825	Residential	25m grid	6.71E-07	1.30E-06	1.13E-07	8.57E-07	1.56E-06	1.35E-06	6.79E-08	8.84E-07	1.93E-06	1.29E-06	5.91E-08	8.49E-07	2.09E-06	2.98E-06	3.27E-06	3.27E-06	1.14E-03
2152	481700	3623825	Residential	25m grid	6.49E-07	1.21E-06	1.05E-07	7.98E-07	1.44E-06	1.25E-06	6.29E-08	8.19E-07	1.78E-06	1.19E-06	5.48E-08	7.87E-07	1.97E-06	2.76E-06	3.03E-06	3.03E-06	1.06E-03
2153	481725	3623825	Residential	25m grid	6.26E-07	1.13E-06	9.78E-08	7.46E-07	1.34E-06	1.17E-06	5.86E-08	7.63E-07	1.66E-06	1.11E-06	5.10E-08	7.32E-07	1.86E-06	2.57E-06	2.82E-06	2.82E-06	9.86E-04
2154	481750	3623825	Residential	25m grid	6.00E-07	1.05E-06	9.05E-08	6.93E-07	1.24E-06	1.08E-06	5.42E-08	7.06E-07	1.54E-06	1.03E-06	4.72E-08	6.78E-07	1.74E-06	2.37E-06	2.61E-06	2.61E-06	9.12E-04
2155	481775	3623825	Residential	25m grid	5.71E-07	9.73E-07	8.34E-08	6.40E-07	1.14E-06	9.94E-07	4.99E-08	6.50E-07	1.41E-06	9.47E-07	4.35E-08	6.24E-07	1.63E-06	2.19E-06	2.40E-06	2.40E-06	8.40E-04
2185	481500	3623850	Residential	25m grid	7.93E-07	2.08E-06	1.86E-07	1.36E-06	2.55E-06	2.22E-06	1.11E-07	1.45E-06	3.16E-06	2.11E-06	9.70E-08	1.39E-06	3.06E-06	4.88E-06	5.37E-06	5.37E-06	1.87E-03
2186	481525	3623850	Residential	25m grid	7.63E-07	1.89E-06	1.68E-07	1.24E-06	2.31E-06	2.01E-06	1.01E-07	1.31E-06	2.86E-06	1.91E-06	8.77E-08	1.26E-06	2.82E-06	4.41E-06	4.85E-06	4.85E-06	1.70E-03
2187	481550	3623850	Residential	25m grid	7.35E-07	1.73E-06	1.54E-07	1.14E-06	2.11E-06	1.83E-06	9.20E-08	1.20E-06	2.61E-06	1.75E-06	8.01E-08	1.15E-06	2.62E-06	4.03E-06	4.43E-06	4.43E-06	1.55E-03
2188	481575	3623850	Residential	25m grid	7.10E-07	1.60E-06	1.41E-07	1.05E-06	1.94E-06	1.68E-06	8.45E-08	1.10E-06	2.39E-06	1.60E-06	7.35E-08	1.06E-06	2.45E-06	3.70E-06	4.07E-06	4.07E-06	1.42E-03
2189	481600	3623850	Residential	25m grid	6.88E-07	1.48E-06	1.30E-07	9.73E-07	1.79E-06	1.55E-06	7.80E-08	1.02E-06	2.21E-06	1.48E-06	6.79E-08	9.75E-07	2.30E-06	3.42E-06	3.76E-06	3.76E-06	1.31E-03
2190	481625	3623850	Residential	25m grid	6.69E-07	1.38E-06	1.21E-07	9.06E-07	1.66E-06	1.44E-06	7.23E-08	9.41E-07	2.05E-06	1.37E-06	6.30E-08	9.04E-07	2.17E-06	3.17E-06	3.48E-06	3.48E-06	1.22E-03
2191	481650	3623850	Residential	25m grid	6.48E-07	1.28E-06	1.12E-07	8.41E-07	1.53E-06	1.33E-06	6.68E-08	8.69E-07	1.89E-06	1.27E-06	5.81E-08	8.35E-07	2.04E-06	2.93E-06	3.22E-06	3.22E-06	1.12E-03
2192	481675	3623850	Residential	25m grid	6.29E-07	1.19E-06	1.04E-07	7.85E-07	1.42E-06	1.24E-06	6.21E-08	8.08E-07	1.76E-06	1.18E-06	5.40E-08	7.76E-07	1.93E-06	2.72E-06	2.99E-06	2.99E-06	1.04E-03
2193	481700	3623850	Residential	25m grid	6.10E-07	1.11E-06	9.63E-08	7.33E-07	1.32E-06	1.15E-06	5.77E-08	7.51E-07	1.64E-06	1.09E-06	5.02E-08	7.21E-07	1.82E-06	2.53E-06	2.78E-06	2.78E-06	9.71E-04
2194	481725	3623850	Residential	25m grid	5.90E-07	1.04E-06	8.98E-08	6.87E-07	1.23E-06	1.07E-06	5.38E-08	7.00E-07	1.52E-06	1.02E-06	4.68E-08	6.72E-07	1.72E-06	2.36E-06	2.59E-06	2.59E-06	9.05E-04
2195	481750	3623850	Residential	25m grid	5.69E-07	9.78E-07	8.39E-08	6.44E-07	1.15E-06	1.00E-06	5.02E-08	6.54E-07	1.42E-06	9.52E-07	4.37E-08	6.28E-07	1.63E-06	2.20E-06	2.42E-06	2.42E-06	8.45E-04
2226	481475	3623875	Residential	25m grid	7.75E-07	1.99E-06	1.78E-07	1.31E-06	2.44E-06	2.12E-06	1.06E-07	1.39E-06	3.02E-06	2.02E-06	9.27E-08	1.33E-06	2.94E-06	4.66E-06	5.13E-06	5.13E-06	1.79E-03
2227	481500	3623875	Residential	25m grid	7.48E-07	1.83E-06	1.63E-07	1.20E-06	2.24E-06	1.95E-06	9.77E-08	1.27E-06	2.77E-06	1.85E-06	8.51E-08	1.22E-06	2.75E-06	4.28E-06	4.71E-06	4.71E-06	1.64E-03
2228	481525	3623875	Residential	25m grid	7.18E-07	1.68E-06	1.49E-07	1.11E-06	2.05E-06	1.78E-06	8.94E-08	1.16E-06	2.53E-06	1.70E-06	7.78E-08	1.12E-06	2.55E-06	3.92E-06	4.31E-06	4.31E-06	1.50E-03
2229	481550	3623875	Residential	25m grid	6.93E-07	1.56E-06	1.38E-07	1.03E-06	1.89E-06	1.65E-06	8.27E-08	1.08E-06	2.34E-06	1.57E-06	7.20E-08	1.03E-06	2.39E-06	3.62E-06	3.98E-06	3.98E-06	1.39E-03
2230	481575	3623875	Residential	25m grid	6.70E-07	1.46E-06	1.28E-07	9.58E-07	1.76E-06	1.53E-06	7.69E-08	1.00E-06	2.18E-06	1.46E-06	6.69E-08	9.61E-07	2.26E-06	3.37E-06	3.71E-06	3.71E-06	1.29E-03
2231	481600	3623875	Residential	25m grid	6.47E-07	1.36E-06	1.19E-07	8.90E-07	1.63E-06	1.42E-06	7.12E-08	9.27E-07	2.02E-06	1.35E-06	6.20E-08	8.90E-07	2.12E-06	3.12E-06	3.43E-06	3.43E-06	1.20E-03
2232	481625	3623875	Residential	25m grid	6.26E-07	1.26E-06	1.10E-07	8.28E-07	1.51E-06	1.31E-06	6.59E-08	8.58E-07	1.87E-06	1.25E-06	5.74E-08	8.24E-07	2.00E-06	2.89E-06	3.18E-06	3.18E-06	1.11E-03
2233	481650	3623875	Residential	25m grid	6.08E-07	1.18E-06	1.03E-07	7.76E-07	1.41E-06	1.22E-06	6.15E-08	8.00E-07	1.74E-06	1.17E-06	5.35E-08	7.68E-07	1.89E-06	2.69E-06	2.96E-06	2.96E-06	1.03E-03
2234	481675	3623875	Residential	25m grid	5.91E-07	1.11E-06	9.58E-08	7.27E-07	1.31E-06	1.14E-06	5.73E-08	7.47E-07	1.63E-06	1.09E-06	4.99E-08	7.17E-07	1.79E-06	2.51E-06	2.76E-06	2.76E-06	9.65E-04
2235	481700	3623875	Residential	25m grid	5.74E-07	1.04E-06	8.94E-08	6.82E-07	1.23E-06	1.07E-06	5.35E-08	6.97E-07	1.52E-06	1.02E-06	4.66E-08	6.69E-07	1.70E-06	2.35E-06	2.58E-06	2.58E-06	9.01E-04
2236	481725	3623875	Residential	25m grid	5.58E-07	9.75E-07	8.38E-08	6.42E-07	1.15E-06	9.99E-07	5.02E-08	6.53E-07	1.42E-06	9.51E-07	4.37E-08	6.27E-07	1.62E-06	2.20E-06	2.42E-06	2.42E-06	8.44E-04
2237	481750	3623875	Residential	25m grid	5.40E-07	9.15E-07	7.84E-08	6.03E-07	1.08E-06	9.34E-07	4.69E-08	6.11E-07	1.33E-06	8.90E-07	4.09E-08	5.87E-07	1.53E-06	2.06E-06	2.26E-06	2.26E-06	7.90E-04
2269	481500	3623900	Residential	25m grid	7.07E-07	1.64E-06	1.46E-07	1.08E-06	2.00E-06	1.74E-06	8.72E-08	1.14E-06	2.47E-06	1.65E-06	7.59E-08	1.09E-06	2.50E-06	3.82E-06	4.20E-06	4.20E-06	1.47E-03
2270	481525	3623900	Residential	25m grid	6.80E-07	1.53E-06	1.35E-07	1.00E-06	1.85E-06	1.61E-06	8.08E-08	1.05E-06	2.29E-06	1.53E-06	7.03E-08	1.01E-06	2.34E-06	3.54E-06	3.89E-06	3.89E-06	1.36E-03
2271	481550	3623900	Residential	25m grid	6.55E-07	1.43E-06	1.26E-07	9.39E-07	1.73E-06	1.50E-06	7.54E-08	9.81E-07	2.14E-06	1.43E-06	6.56E-08	9.42E-07	2.21E-06	3.30E-06	3.63E-06	3.63E-06	1.27E-03
2272	481575	3623900	Residential	25m grid	6.32E-07	1.34E-06	1.17E-07	8.79E-07	1.61E-06	1.40E-06	7.04E-08	9.16E-07	1.99E-06	1.33E-06	6.12E-08	8.80E-07	2.09E-06	3.08E-06	3.39E-06	3.39E-06	1.18E-03
2273	481600	3623900	Residential	25m grid	6.09E-07	1.25E-06	1.09E-07	8.21E-07	1.50E-06	1.30E-06	6.55E-08	8.52E-07	1.86E-06	1.24E-06	5.70E-08	8.18E-07	1.97E-06	2.87E-06	3.15E-06	3.15E-06	1.10E-03
2274	481625	3623900	Residential	25m grid	5.88E-07	1.17E-06	1.02E-07	7.67E-07	1.39E-06	1.21E-06	6.09E-08	7.93E-07	1.73E-06	1.16E-06	5.30E-08	7.61E-07	1.86E-06	2.67E-06	2.93E-06	2.93E-06	1.02E-03
2275	481650	3623900	Residential	25m grid	5.70E-07	1.09E-06	9.50E-08	7.19E-07	1.30E-06	1.13E-06	5.69E-08	7.40E-07	1.61E-06	1.08E-06	4.95E-08	7.11E-07	1.76E-06	2.49E-06	2.74E-06	2.74E-06	9.57E-04
2276	481675	3623900	Residential	25m grid	5.55E-07	1.03E-06	8.89E-08	6.76E-07	1.22E-06	1.06E-06	5.32E-08	6.93E-07	1.51E-06	1.01E-06	4.63E-08	6.65E-07	1.67E-06	2.33E-06	2.56E-06	2.56E-06	8.96E-04
2277	481700	3623900	Residential	25m grid	5.41E-07	9.68E-07	8.34E-08	6.37E-07	1.14E-06	9.94E-07	4.99E-08	6.50E-07	1.42E-06	9.47E-07	4.35E-08	6.24E-07	1.59E-06	2.19E-06	2.41E-06	2.41E-06	8.40E-04
2278	481725	3623900	Residential	25m grid	5.27E-07	9.13E-07	7.84E-08	6.01E-07	1.08E-06	9.35E-07	4.70E-08	6.12E-07	1.33E-06	8.91E-07	4.09E-08	5.87E-07	1.52E-06	2.06E-06	2.26E-06	2.26E-06	7.90E-04
2619	479300	3621700	Residential	100m grid	1.84E-08	1.72E-08	1.32E-09	1.14E-08	1.81E-08	1.57E-08	7.91E-10	1.03E-08	2.24E-08	1.50E-08	6.88E-10	9.88E-09	3.68E-08	3.46E-08	3.81E-08	3.81E-08	1.33E-05
2620	479400	3621700	Residential	100m grid	1.95E-08	1.78E-08	1.36E-09	1.19E-08	1.87E-08	1.63E-08	8.17E-10	1.06E-08	2.31E-08	1.55E-08	7.11E-10	1.02E-08	3.87E-08	3.58E-08	3.93E-08	3.93E-08	1.37E-05
2621	479500	3621700	Residential	100m grid	2.06E-08	1.85E-08	1.41E-09	1.23E-08	1.93E-08	1.68E-08	8.42E-10	1.10E-08	2.39E-08	1.60E-08	7.33E-10	1.05E-08	4.04E-08	3.69E-08	4.06E-08	4.06E-08	1.42E-05
2622	479600	3621700	Residential	100m grid	2.15E-08	1.91E-08	1.45E-09	1.27E-08	1.99E-08	1.73E-08	8.68E-10	1.13E-08	2.46E-08	1.65E-08	7.55E-10	1.08E-08	4.21E-08	3.80E-08	4.18E-08	4.21E-08	1.46E-05
2623	479700	3621700	Residential	100m grid	2.23E-08	1.97E-08	1.50E-09	1.31E-08	2.05E-08	1.78E-08	8.96E-10	1.17E-08	2.54E-08	1.70E-08	7.80E-10	1.12E-08	4.35E-08	3.93E-08	4.32E-08	4.35E-08	1.51E-05
2663	479300	3621800	Residential	100m grid	1.86E-08	1.78E-08	1.37E-09	1.18E-08	1.88E-08	1.64E-08	8.22E-10	1.07E-08	2.33E-08	1.56E-08	7.16E-10	1.03E-08	3.78E-08	3.60E-08	3.96E-08	3.96E-08	1.38E-05
2664	479400	3621800	Residential	100m grid	1.99E-08	1.86E-08	1.43E-09	1.24E-08	1.96E-08	1.70E-08	8.55E-10	1.11E-08	2.42E-08	1.62E-08	7.44E-10	1.07E-08	3.99E-08	3.75E-08	4.12E-08	4.12E-08	1.44E-05
2665	479500	3621800	Residential	100m grid	2.13E-08	1.94E-08	1.48E-09	1.29E-08	2.03E-08	1.77E-08	8.87E-10	1.15E-08	2.51E-08	1.68E-08	7.72E-10	1.11E-08	4.21E-08	3.88E-08	4.27E-08	4.27E-08	1.49E-05
2666	479600	3621800	Residential	100m grid	2.26E-08	2.01E-08	1.53E-09	1.34E-08	2.10E-08	1.82E-08	9.16E-10	1.19E-08	2.60E-08	1.74E-08	7.98E-10	1.15E-08	4.42E-08	4.01E-08	4.41E-08	4.42E-08	1.54E-05
2707	479300	3621900	Residential	100m grid	1.83E-08	1.82E-08	1.42E-09	1.21E-08	1.95E-08	1.69E-08	8.50E-10	1.11E-08	2.41E-08	1.61E-08	7.40E-10	1.06E-08	3.79E-08	3.72E-08	4.09E-08	4.09E-08	1.43E-05
2751	479300	3622000	Residential	100m grid	1.87E-08	1.84E-08	1.44E-09	1.22E-08	1.97E-08	1.71E-08	8.60E-10	1.12E-08	2.44E-08	1.63E-08	7.48E-10	1.07E-08	3.85E-08	3.77E-08	4.14E-08	4.14E-08	1.45E-05
2752	479400	3622000	Residential	100m grid	2.11E-08	1.99E-08	1.54E-09	1.33E-08	2.11E-08	1.83E-08	9.21E-10	1.20E-08	2.61E-08	1.75E-08	8.02E-10	1.15E-08	4.26E-08	4.04E-08	4.44E-08	4.44E-08	1.55E-05
2795	479300	3622100	Residential	100m grid	1.94E-08	1.79E-08	1.37E-09	1.19E-08	1.89E-08	1.64E-08	8.23E-10	1.07E-08	2.33E-08	1.56E-08	7.17E-10	1.03E-08	3.87E-08	3.61E-08	3.97E-08	3.97E-08	1.39E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	HARP Output, Exposure Scenario A: Resi-dential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario A: Resi-dential Cancer Risk Age 2-16	HARP Output, Exposure Scenario A: Resi-dential Cancer Risk Age 16-30	HARP Output, Exposure Scenario A: Worker Cancer Risk	HARP Output, Exposure Scenario B: Resi-dential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario B: Resi-dential Cancer Risk Age 2-16	HARP Output, Exposure Scenario B: Resi-dential Cancer Risk Age 16-30	HARP Output, Exposure Scenario B: Worker Cancer Risk	HARP Output, Exposure Scenario C: Resi-dential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario C: Resi-dential Cancer Risk Age 2-16	HARP Output, Exposure Scenario C: Resi-dential Cancer Risk Age 16-30	HARP Output, Exposure Scenario C: Worker Cancer Risk	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario A	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario B	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario C	Health Risk Quantified by Receptor Type: Max Cancer Risk	Health Risk Quantified by Receptor Type: Max Chronic Hazard Index
2796	479400	3622100	Residential	100m grid	2.16E-08	2.03E-08	1.57E-09	1.35E-08	2.15E-08	1.87E-08	9.39E-10	1.22E-08	2.66E-08	1.78E-08	8.18E-10	1.17E-08	4.35E-08	4.12E-08	4.53E-08	4.53E-08	1.58E-05
2838	483600	3622100	Residential	100m grid	2.84E-07	2.79E-07	2.18E-08	1.86E-07	2.99E-07	2.60E-07	1.30E-08	1.70E-07	3.70E-07	2.47E-07	1.13E-08	1.63E-07	5.86E-07	5.71E-07	6.28E-07	6.28E-07	2.19E-04
2839	479300	3622200	Residential	100m grid	2.18E-08	1.89E-08	1.42E-09	1.26E-08	1.95E-08	1.70E-08	8.51E-10	1.11E-08	2.41E-08	1.61E-08	7.41E-10	1.06E-08	4.21E-08	3.73E-08	4.10E-08	4.21E-08	1.43E-05
2840	479400	3622200	Residential	100m grid	2.26E-08	2.00E-08	1.52E-09	1.33E-08	2.08E-08	1.81E-08	9.09E-10	1.18E-08	2.58E-08	1.72E-08	7.91E-10	1.14E-08	4.41E-08	3.98E-08	4.38E-08	4.41E-08	1.53E-05
2841	479500	3622200	Residential	100m grid	2.44E-08	2.22E-08	1.70E-09	1.48E-08	2.33E-08	2.02E-08	1.02E-09	1.32E-08	2.88E-08	1.93E-08	8.84E-10	1.27E-08	4.83E-08	4.45E-08	4.89E-08	4.89E-08	1.71E-05
2882	483600	3622200	Residential	100m grid	2.49E-07	2.55E-07	2.01E-08	1.70E-07	2.75E-07	2.39E-07	1.20E-08	1.57E-07	3.41E-07	2.28E-07	1.05E-08	1.50E-07	5.25E-07	5.27E-07	5.80E-07	5.80E-07	2.02E-04
2883	479300	3622300	Residential	100m grid	2.01E-08	1.73E-08	1.30E-09	1.15E-08	1.78E-08	1.55E-08	7.79E-10	1.01E-08	2.21E-08	1.48E-08	6.78E-10	9.74E-09	3.86E-08	3.41E-08	3.75E-08	3.86E-08	1.31E-05
2884	479400	3622300	Residential	100m grid	2.32E-08	1.98E-08	1.49E-09	1.32E-08	2.04E-08	1.77E-08	8.91E-10	1.16E-08	2.53E-08	1.69E-08	7.76E-10	1.11E-08	4.45E-08	3.90E-08	4.29E-08	4.45E-08	1.50E-05
2885	479500	3622300	Residential	100m grid	2.62E-08	2.26E-08	1.70E-09	1.51E-08	2.34E-08	2.03E-08	1.02E-09	1.33E-08	2.89E-08	1.93E-08	8.88E-10	1.27E-08	5.05E-08	4.47E-08	4.91E-08	5.05E-08	1.72E-05
2886	479600	3622300	Residential	100m grid	2.78E-08	2.44E-08	1.85E-09	1.63E-08	2.54E-08	2.20E-08	1.11E-09	1.44E-08	3.14E-08	2.10E-08	9.64E-10	1.38E-08	5.41E-08	4.85E-08	5.33E-08	5.41E-08	1.86E-05
2925	483500	3622300	Residential	100m grid	2.67E-07	2.82E-07	2.23E-08	1.87E-07	3.06E-07	2.66E-07	1.34E-08	1.74E-07	3.79E-07	2.54E-07	1.16E-08	1.67E-07	5.72E-07	5.86E-07	6.44E-07	6.44E-07	2.25E-04
2926	483600	3622300	Residential	100m grid	2.34E-07	2.54E-07	2.03E-08	1.69E-07	2.78E-07	2.42E-07	1.21E-08	1.58E-07	3.44E-07	2.30E-07	1.06E-08	1.52E-07	5.09E-07	5.32E-07	5.85E-07	5.85E-07	2.04E-04
2927	479300	3622400	Residential	100m grid	2.01E-08	1.85E-08	1.41E-09	1.23E-08	1.94E-08	1.69E-08	8.47E-10	1.10E-08	2.40E-08	1.61E-08	7.37E-10	1.06E-08	3.99E-08	3.71E-08	4.08E-08	4.08E-08	1.43E-05
2928	479400	3622400	Residential	100m grid	2.26E-08	2.00E-08	1.51E-09	1.33E-08	2.08E-08	1.81E-08	9.07E-10	1.18E-08	2.57E-08	1.72E-08	7.89E-10	1.13E-08	4.40E-08	3.97E-08	4.37E-08	4.40E-08	1.53E-05
2929	479500	3622400	Residential	100m grid	2.58E-08	2.22E-08	1.67E-09	1.48E-08	2.30E-08	2.00E-08	1.00E-09	1.31E-08	2.84E-08	1.90E-08	8.73E-10	1.25E-08	4.97E-08	4.39E-08	4.83E-08	4.97E-08	1.69E-05
2930	479600	3622400	Residential	100m grid	2.90E-08	2.47E-08	1.86E-09	1.65E-08	2.55E-08	2.22E-08	1.11E-09	1.45E-08	3.16E-08	2.11E-08	9.69E-10	1.39E-08	5.56E-08	4.88E-08	5.36E-08	5.56E-08	1.87E-05
2968	483400	3622400	Residential	100m grid	3.19E-07	3.52E-07	2.82E-08	2.34E-07	3.87E-07	3.36E-07	1.69E-08	2.20E-07	4.78E-07	3.20E-07	1.47E-08	2.11E-07	6.99E-07	7.39E-07	8.13E-07	8.13E-07	2.84E-04
2969	483500	3622400	Residential	100m grid	2.34E-07	2.69E-07	2.16E-08	1.78E-07	2.97E-07	2.58E-07	1.30E-08	1.69E-07	3.67E-07	2.46E-07	1.13E-08	1.62E-07	5.24E-07	5.67E-07	6.24E-07	6.24E-07	2.18E-04
2970	483600	3622400	Residential	100m grid	2.02E-07	2.40E-07	1.95E-08	1.59E-07	2.67E-07	2.32E-07	1.17E-08	1.52E-07	3.31E-07	2.21E-07	1.02E-08	1.46E-07	4.61E-07	5.12E-07	5.63E-07	5.63E-07	1.96E-04
2971	479300	3622500	Residential	100m grid	1.61E-08	1.69E-08	1.34E-09	1.12E-08	1.83E-08	1.59E-08	8.00E-10	1.04E-08	2.27E-08	1.52E-08	6.96E-10	1.00E-08	3.44E-08	3.50E-08	3.85E-08	3.85E-08	1.35E-05
2972	479400	3622500	Residential	100m grid	1.91E-08	1.88E-08	1.47E-09	1.25E-08	2.01E-08	1.75E-08	8.78E-10	1.14E-08	2.49E-08	1.66E-08	7.64E-10	1.10E-08	3.94E-08	3.85E-08	4.23E-08	4.23E-08	1.48E-05
2973	479500	3622500	Residential	100m grid	2.38E-08	2.20E-08	1.69E-09	1.47E-08	2.32E-08	2.02E-08	1.01E-09	1.32E-08	2.87E-08	1.92E-08	8.82E-10	1.27E-08	4.76E-08	4.44E-08	4.88E-08	4.88E-08	1.70E-05
2974	479600	3622500	Residential	100m grid	2.84E-08	2.53E-08	1.93E-09	1.69E-08	2.64E-08	2.30E-08	1.15E-09	1.50E-08	3.27E-08	2.19E-08	1.00E-09	1.44E-08	5.56E-08	5.06E-08	5.56E-08	5.56E-08	1.94E-05
2975	479700	3622500	Residential	100m grid	3.16E-08	2.73E-08	2.06E-09	1.82E-08	2.83E-08	2.46E-08	1.23E-09	1.61E-08	3.50E-08	2.34E-08	1.07E-09	1.54E-08	6.10E-08	5.41E-08	5.95E-08	6.10E-08	2.08E-05
3009	483100	3622500	Residential	100m grid	4.67E-07	5.20E-07	4.16E-08	3.45E-07	5.71E-07	4.96E-07	2.49E-08	3.25E-07	7.07E-07	4.73E-07	2.17E-08	3.12E-07	1.03E-06	1.09E-06	1.20E-06	1.20E-06	4.20E-04
3012	483400	3622500	Residential	100m grid	2.63E-07	3.25E-07	2.66E-08	2.15E-07	3.65E-07	3.17E-07	1.59E-08	2.07E-07	4.51E-07	3.02E-07	1.39E-08	1.99E-07	6.15E-07	6.97E-07	7.67E-07	7.67E-07	2.68E-04
3013	483500	3622500	Residential	100m grid	2.08E-07	2.70E-07	2.22E-08	1.78E-07	3.05E-07	2.65E-07	1.33E-08	1.73E-07	3.77E-07	2.52E-07	1.16E-08	1.66E-07	5.00E-07	5.83E-07	6.41E-07	6.41E-07	2.24E-04
3014	483600	3622500	Residential	100m grid	1.71E-07	2.32E-07	1.93E-08	1.54E-07	2.65E-07	2.30E-07	1.16E-08	1.50E-07	3.27E-07	2.19E-07	1.01E-08	1.44E-07	4.23E-07	5.06E-07	5.57E-07	5.57E-07	1.94E-04
3015	479300	3622600	Residential	100m grid	1.46E-08	1.68E-08	1.35E-09	1.11E-08	1.86E-08	1.61E-08	8.10E-10	1.05E-08	2.30E-08	1.54E-08	7.05E-10	1.01E-08	3.27E-08	3.55E-08	3.90E-08	3.90E-08	1.36E-05
3016	479400	3622600	Residential	100m grid	1.74E-08	1.92E-08	1.53E-09	1.27E-08	2.10E-08	1.83E-08	9.18E-10	1.19E-08	2.60E-08	1.74E-08	7.99E-10	1.15E-08	3.81E-08	4.02E-08	4.42E-08	4.42E-08	1.54E-05
3017	479500	3622600	Residential	100m grid	2.15E-08	2.22E-08	1.75E-09	1.47E-08	2.40E-08	2.08E-08	1.05E-09	1.36E-08	2.97E-08	1.99E-08	9.11E-10	1.31E-08	4.54E-08	4.59E-08	5.04E-08	5.04E-08	1.76E-05
3018	479600	3622600	Residential	100m grid	2.55E-08	2.49E-08	1.93E-09	1.65E-08	2.65E-08	2.30E-08	1.16E-09	1.51E-08	3.28E-08	2.20E-08	1.01E-09	1.45E-08	5.23E-08	5.07E-08	5.58E-08	5.58E-08	1.95E-05
3019	479700	3622600	Residential	100m grid	2.93E-08	2.73E-08	2.10E-09	1.82E-08	2.88E-08	2.50E-08	1.26E-09	1.64E-08	3.57E-08	2.39E-08	1.09E-09	1.57E-08	5.87E-08	5.51E-08	6.06E-08	6.06E-08	2.12E-05
3020	479800	3622600	Residential	100m grid	3.39E-08	3.02E-08	2.30E-09	2.01E-08	3.16E-08	2.74E-08	1.38E-09	1.79E-08	3.91E-08	2.61E-08	1.20E-09	1.72E-08	6.64E-08	6.04E-08	6.64E-08	6.64E-08	2.32E-05
3028	480600	3622600	Residential	100m grid	8.58E-08	7.03E-08	5.21E-09	4.69E-08	7.15E-08	6.22E-08	3.12E-09	4.06E-08	8.85E-08	5.92E-08	2.72E-09	3.90E-08	1.61E-07	1.37E-07	1.50E-07	1.61E-07	5.25E-05
3029	480700	3622600	Residential	100m grid	9.59E-08	8.24E-08	6.20E-09	5.49E-08	8.51E-08	7.40E-08	3.71E-09	4.84E-08	1.05E-07	7.05E-08	3.23E-09	4.64E-08	1.85E-07	1.63E-07	1.79E-07	1.85E-07	6.25E-05
3030	480800	3622600	Residential	100m grid	1.11E-07	9.98E-08	7.60E-09	6.64E-08	1.04E-07	9.06E-08	4.55E-09	5.93E-08	1.29E-07	8.63E-08	3.96E-09	5.69E-08	2.18E-07	1.99E-07	2.19E-07	2.19E-07	7.66E-05
3055	483300	3622600	Residential	100m grid	2.41E-07	3.31E-07	2.76E-08	2.19E-07	3.78E-07	3.29E-07	1.65E-08	2.15E-07	4.68E-07	3.13E-07	1.44E-08	2.06E-07	6.00E-07	7.23E-07	7.95E-07	7.95E-07	2.78E-04
3056	483400	3622600	Residential	100m grid	2.31E-07	3.32E-07	2.78E-08	2.19E-07	3.81E-07	3.31E-07	1.66E-08	2.17E-07	4.72E-07	3.16E-07	1.45E-08	2.08E-07	5.91E-07	7.29E-07	8.02E-07	8.02E-07	2.80E-04
3057	483500	3622600	Residential	100m grid	1.62E-07	2.44E-07	2.06E-08	1.61E-07	2.82E-07	2.45E-07	1.23E-08	1.60E-07	3.49E-07	2.34E-07	1.07E-08	1.54E-07	4.27E-07	5.40E-07	5.93E-07	5.93E-07	2.07E-04
3058	483600	3622600	Residential	100m grid	1.37E-07	2.13E-07	1.81E-08	1.41E-07	2.48E-07	2.15E-07	1.08E-08	1.41E-07	3.07E-07	2.05E-07	9.42E-09	1.35E-07	3.68E-07	4.74E-07	5.21E-07	5.21E-07	1.82E-04
3059	479300	3622700	Residential	100m grid	1.60E-08	1.73E-08	1.38E-09	1.15E-08	1.89E-08	1.65E-08	8.27E-10	1.08E-08	2.34E-08	1.57E-08	7.20E-10	1.03E-08	3.47E-08	3.62E-08	3.98E-08	3.98E-08	1.39E-05
3060	479400	3622700	Residential	100m grid	1.77E-08	1.96E-08	1.56E-09	1.30E-08	2.15E-08	1.87E-08	9.37E-10	1.22E-08	2.66E-08	1.78E-08	8.16E-10	1.17E-08	3.89E-08	4.10E-08	4.51E-08	4.51E-08	1.58E-05
3061	479500	3622700	Residential	100m grid	2.02E-08	2.21E-08	1.76E-09	1.47E-08	2.42E-08	2.10E-08	1.06E-09	1.38E-08	3.00E-08	2.00E-08	9.20E-10	1.32E-08	4.41E-08	4.63E-08	5.09E-08	5.09E-08	1.78E-05
3062	479600	3622700	Residential	100m grid	2.26E-08	2.42E-08	1.92E-09	1.61E-08	2.64E-08	2.29E-08	1.15E-09	1.50E-08	3.26E-08	2.18E-08	1.00E-09	1.44E-08	4.88E-08	5.04E-08	5.54E-08	5.54E-08	1.94E-05
3063	479700	3622700	Residential	100m grid	2.59E-08	2.67E-08	2.10E-09	1.77E-08	2.88E-08	2.50E-08	1.26E-09	1.64E-08	3.56E-08	2.38E-08	1.09E-09	1.57E-08	5.46E-08	5.51E-08	6.06E-08	6.06E-08	2.12E-05
3064	479800	3622700	Residential	100m grid	3.05E-08	3.00E-08	2.34E-09	1.99E-08	3.20E-08	2.78E-08	1.40E-09	1.82E-08	3.96E-08	2.65E-08	1.22E-09	1.75E-08	6.29E-08	6.13E-08	6.74E-08	6.74E-08	2.35E-05
3065	479900	3622700	Residential	100m grid	3.58E-08	3.35E-08	2.58E-09	2.23E-08	3.54E-08	3.07E-08	1.54E-09	2.01E-08	4.38E-08	2.93E-08	1.34E-09	1.93E-08	7.18E-08	6.76E-08	7.44E-08	7.44E-08	2.60E-05
3072	480600	3622700	Residential	100m grid	9.69E-08	7.67E-08	5.63E-09	5.12E-08	7.73E-08	6.72E-08	3.37E-09	4.39E-08	9.57E-08	6.40E-08	2.94E-09	4.22E-08	1.79E-07	1.48E-07	1.63E-07	1.79E-07	5.80E-05
3073	480700	3622700	Residential	100m grid	1.12E-07	9.05E-08	6.69E-09	6.04E-08	9.17E-08	7.97E-08	4.00E-09	5.21E-08	1.14E-07	7.59E-08	3.49E-09	5.01E-08	2.09E-07	1.75E-07	1.93E-07	2.09E-07	6.74E-05
3074	480800	3622700	Residential	100m grid	1.30E-07	1.10E-07	8.24E-09	7.33E-08	1.13E-07	9.82E-08	4.93E-09	6.42E-08	1.40E-07	9.36E-08	4.29E-09	6.17E-08	2.48E-07	2.16E-07	2.38E-07	2.48E-07	8.30E-05
3092	482600	3622700	Residential	100m grid	7.70E-07	9.01E-07	7.28E-08	5.96E-07	9.99E-07	8.68E-07	4.36E-08	5.68E-07	1.24E-06	8.27E-07	3.80E-08	5.45E-07	1.74E-06	1.91E-06	2.10E-06	2.10E-06	7.34E-04
3093	482700	3622700	Residential	100m grid	6.75E-07	8.21E-07	6.68E-08	5.43E-07	9.16E-07	7.97E-07	4.00E-08	5.21E-07	1.13E-06	7.59E-07	3.48E-08	5.00E-07	1.56E-06	1.75E-06	1.93E-06	1.93E-06	6.73E-04
3098	483200	3622700	Residential	100m grid	2.61E-07	4.03E-07	3.41E-08	2.66E-07	4.68E-07	4.07E-07	2.04E-08	2.66E-07	5.79E-07	3.88E-07	1.78E-08	2.56E-07	6.99E-07	8.96E-07	9.85E-07	9.85E-07	3.44E-04

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3099	483300	3622700	Residential	100m grid	1.94E-07	3.12E-07	2.65E-08	2.05E-07	3.64E-07	3.16E-07	1.59E-08	2.07E-07	4.50E-07	3.01E-07	1.38E-08	1.98E-07	5.33E-07	6.96E-07	7.65E-07	7.65E-07	2.67E-04
3100	483400	3622700	Residential	100m grid	1.65E-07	2.72E-07	2.32E-08	1.79E-07	3.18E-07	2.76E-07	1.39E-08	1.81E-07	3.94E-07	2.63E-07	1.21E-08	1.74E-07	4.60E-07	6.08E-07	6.69E-07	6.69E-07	2.34E-04
3101	483500	3622700	Residential	100m grid	1.29E-07	2.17E-07	1.86E-08	1.43E-07	2.55E-07	2.22E-07	1.11E-08	1.45E-07	3.16E-07	2.11E-07	9.70E-09	1.39E-07	3.65E-07	4.88E-07	5.37E-07	5.37E-07	1.87E-04
3102	483600	3622700	Residential	100m grid	1.10E-07	1.88E-07	1.61E-08	1.24E-07	2.21E-07	1.92E-07	9.64E-09	1.26E-07	2.73E-07	1.83E-07	8.39E-09	1.21E-07	3.14E-07	4.22E-07	4.65E-07	4.65E-07	1.62E-04
3103	479300	3622800	Residential	100m grid	1.84E-08	1.74E-08	1.35E-09	1.16E-08	1.85E-08	1.61E-08	8.07E-10	1.05E-08	2.29E-08	1.53E-08	7.03E-10	1.01E-08	3.72E-08	3.54E-08	3.89E-08	3.89E-08	1.36E-05
3104	479400	3622800	Residential	100m grid	1.99E-08	1.95E-08	1.52E-09	1.30E-08	2.09E-08	1.81E-08	9.11E-10	1.19E-08	2.58E-08	1.73E-08	7.93E-10	1.14E-08	4.10E-08	3.99E-08	4.39E-08	4.39E-08	1.53E-05
3105	479500	3622800	Residential	100m grid	2.15E-08	2.18E-08	1.71E-09	1.44E-08	2.34E-08	2.03E-08	1.02E-09	1.33E-08	2.90E-08	1.94E-08	8.89E-10	1.28E-08	4.50E-08	4.48E-08	4.92E-08	4.92E-08	1.72E-05
3106	479600	3622800	Residential	100m grid	2.32E-08	2.39E-08	1.88E-09	1.59E-08	2.58E-08	2.25E-08	1.13E-09	1.47E-08	3.20E-08	2.14E-08	9.82E-10	1.41E-08	4.90E-08	4.94E-08	5.44E-08	5.44E-08	1.90E-05
3107	479700	3622800	Residential	100m grid	2.58E-08	2.67E-08	2.11E-09	1.77E-08	2.89E-08	2.51E-08	1.26E-09	1.64E-08	3.57E-08	2.39E-08	1.10E-09	1.58E-08	5.45E-08	5.52E-08	6.07E-08	6.07E-08	2.12E-05
3108	479800	3622800	Residential	100m grid	2.86E-08	2.95E-08	2.32E-09	1.96E-08	3.18E-08	2.77E-08	1.39E-09	1.81E-08	3.94E-08	2.64E-08	1.21E-09	1.74E-08	6.04E-08	6.09E-08	6.70E-08	6.70E-08	2.34E-05
3109	479900	3622800	Residential	100m grid	3.23E-08	3.27E-08	2.56E-09	2.17E-08	3.52E-08	3.06E-08	1.53E-09	2.00E-08	4.35E-08	2.91E-08	1.34E-09	1.92E-08	6.75E-08	6.72E-08	7.39E-08	7.39E-08	2.58E-05
3116	480600	3622800	Residential	100m grid	1.07E-07	8.38E-08	6.14E-09	5.60E-08	8.42E-08	7.32E-08	3.68E-09	4.78E-08	1.04E-07	6.97E-08	3.20E-09	4.59E-08	1.97E-07	1.61E-07	1.77E-07	1.97E-07	6.41E-05
3117	480700	3622800	Residential	100m grid	1.29E-07	1.00E-07	7.31E-09	6.70E-08	1.00E-07	8.72E-08	4.38E-09	5.70E-08	1.24E-07	8.30E-08	3.81E-09	5.47E-08	2.37E-07	1.92E-07	2.11E-07	2.37E-07	7.73E-05
3118	480800	3622800	Residential	100m grid	1.55E-07	1.23E-07	9.02E-09	8.21E-08	1.24E-07	1.08E-07	5.40E-09	7.04E-08	1.53E-07	1.03E-07	4.70E-09	6.76E-08	2.87E-07	2.37E-07	2.60E-07	2.87E-07	9.31E-05
3132	483100	3622800	Residential	100m grid	2.30E-07	3.98E-07	3.42E-08	2.62E-07	4.69E-07	4.07E-07	2.05E-08	2.66E-07	5.80E-07	3.88E-07	1.78E-08	2.56E-07	6.62E-07	8.96E-07	9.86E-07	9.86E-07	3.44E-04
3133	483200	3622800	Residential	100m grid	1.77E-07	3.11E-07	2.68E-08	2.05E-07	3.68E-07	3.20E-07	1.60E-08	2.09E-07	4.55E-07	3.04E-07	1.40E-08	2.01E-07	5.15E-07	7.03E-07	7.73E-07	7.73E-07	2.70E-04
3134	483300	3622800	Residential	100m grid	1.55E-07	2.74E-07	2.36E-08	1.81E-07	3.24E-07	2.82E-07	1.42E-08	1.84E-07	4.01E-07	2.68E-07	1.23E-08	1.77E-07	4.53E-07	6.20E-07	6.82E-07	6.82E-07	2.38E-04
3135	483400	3622800	Residential	100m grid	1.20E-07	2.12E-07	1.83E-08	1.40E-07	2.51E-07	2.18E-07	1.10E-08	1.43E-07	3.10E-07	2.08E-07	9.53E-09	1.37E-07	3.51E-07	4.80E-07	5.28E-07	5.28E-07	1.84E-04
3136	483500	3622800	Residential	100m grid	1.06E-07	1.86E-07	1.60E-08	1.22E-07	2.19E-07	1.90E-07	9.55E-09	1.24E-07	2.71E-07	1.81E-07	8.32E-09	1.19E-07	3.07E-07	4.19E-07	4.60E-07	4.60E-07	1.61E-04
3137	483600	3622800	Residential	100m grid	9.32E-08	1.61E-07	1.38E-08	1.06E-07	1.90E-07	1.65E-07	8.29E-09	1.08E-07	2.35E-07	1.57E-07	7.22E-09	1.04E-07	2.68E-07	3.63E-07	3.99E-07	3.99E-07	1.40E-04
3138	479300	3622900	Residential	100m grid	1.88E-08	1.75E-08	1.34E-09	1.16E-08	1.84E-08	1.60E-08	8.03E-10	1.05E-08	2.28E-08	1.52E-08	6.99E-10	1.00E-08	3.76E-08	3.52E-08	3.87E-08	3.87E-08	1.35E-05
3139	479400	3622900	Residential	100m grid	2.09E-08	1.95E-08	1.50E-09	1.30E-08	2.06E-08	1.79E-08	9.00E-10	1.17E-08	2.55E-08	1.71E-08	7.83E-10	1.13E-08	4.20E-08	3.94E-08	4.34E-08	4.34E-08	1.51E-05
3140	479500	3622900	Residential	100m grid	2.30E-08	2.17E-08	1.68E-09	1.45E-08	2.30E-08	2.00E-08	1.00E-09	1.31E-08	2.85E-08	1.91E-08	8.74E-10	1.26E-08	4.65E-08	4.40E-08	4.84E-08	4.84E-08	1.69E-05
3141	479600	3622900	Residential	100m grid	2.53E-08	2.42E-08	1.87E-09	1.61E-08	2.56E-08	2.23E-08	1.12E-09	1.46E-08	3.17E-08	2.12E-08	9.75E-10	1.40E-08	5.13E-08	4.91E-08	5.39E-08	5.39E-08	1.88E-05
3142	479700	3622900	Residential	100m grid	2.74E-08	2.66E-08	2.06E-09	1.77E-08	2.83E-08	2.46E-08	1.23E-09	1.61E-08	3.50E-08	2.34E-08	1.07E-09	1.54E-08	5.60E-08	5.41E-08	5.95E-08	5.95E-08	2.08E-05
3143	479800	3622900	Residential	100m grid	2.98E-08	2.92E-08	2.27E-09	1.94E-08	3.11E-08	2.71E-08	1.36E-09	1.77E-08	3.85E-08	2.58E-08	1.18E-09	1.70E-08	6.13E-08	5.96E-08	6.55E-08	6.55E-08	2.29E-05
3144	479900	3622900	Residential	100m grid	3.33E-08	3.28E-08	2.56E-09	2.18E-08	3.51E-08	3.05E-08	1.53E-09	1.99E-08	4.34E-08	2.90E-08	1.33E-09	1.91E-08	6.86E-08	6.71E-08	7.37E-08	7.37E-08	2.58E-05
3145	480000	3622900	Residential	100m grid	3.82E-08	3.75E-08	2.92E-09	2.49E-08	4.01E-08	3.48E-08	1.75E-09	2.28E-08	4.96E-08	3.32E-08	1.52E-09	2.19E-08	7.86E-08	7.66E-08	8.43E-08	8.43E-08	2.94E-05
3148	480300	3622900	Residential	100m grid	6.47E-08	5.76E-08	4.37E-09	3.84E-08	6.00E-08	5.22E-08	2.62E-09	3.41E-08	7.43E-08	4.97E-08	2.28E-09	3.28E-08	1.27E-07	1.15E-07	1.26E-07	1.27E-07	4.41E-05
3150	480500	3622900	Residential	100m grid	9.38E-08	7.66E-08	5.68E-09	5.11E-08	7.79E-08	6.77E-08	3.40E-09	4.43E-08	9.64E-08	6.45E-08	2.96E-09	4.25E-08	1.76E-07	1.49E-07	1.64E-07	1.76E-07	5.72E-05
3151	480600	3622900	Residential	100m grid	1.15E-07	9.10E-08	6.68E-09	6.08E-08	9.17E-08	7.97E-08	4.00E-09	5.21E-08	1.13E-07	7.59E-08	3.48E-09	5.00E-08	2.13E-07	1.75E-07	1.93E-07	2.13E-07	6.90E-05
3152	480700	3622900	Residential	100m grid	1.43E-07	1.11E-07	8.08E-09	7.41E-08	1.11E-07	9.63E-08	4.84E-09	6.30E-08	1.37E-07	9.18E-08	4.21E-09	6.05E-08	2.62E-07	2.12E-07	2.33E-07	2.62E-07	8.58E-05
3153	480800	3622900	Residential	100m grid	1.82E-07	1.39E-07	1.00E-08	9.26E-08	1.38E-07	1.20E-07	6.01E-09	7.83E-08	1.70E-07	1.14E-07	5.23E-09	7.52E-08	3.31E-07	2.63E-07	2.90E-07	3.31E-07	1.09E-04
3157	482300	3622900	Residential	100m grid	1.07E-06	1.62E-06	1.36E-07	1.07E-06	1.87E-06	1.63E-06	8.17E-08	1.06E-06	2.31E-06	1.55E-06	7.11E-08	1.02E-06	2.82E-06	3.58E-06	3.93E-06	3.93E-06	1.37E-03
3158	482400	3622900	Residential	100m grid	8.50E-07	1.35E-06	1.14E-07	8.89E-07	1.57E-06	1.37E-06	6.86E-08	8.93E-07	1.94E-06	1.30E-06	5.97E-08	8.57E-07	2.31E-06	3.00E-06	3.30E-06	3.30E-06	1.15E-03
3161	482700	3622900	Residential	100m grid	3.79E-07	6.85E-07	5.91E-08	4.51E-07	8.11E-07	7.05E-07	3.54E-08	4.61E-07	1.00E-06	6.71E-07	3.08E-08	4.43E-07	1.12E-06	1.55E-06	1.71E-06	1.71E-06	5.96E-04
3162	482800	3622900	Residential	100m grid	3.15E-07	5.86E-07	5.07E-08	3.85E-07	6.96E-07	6.05E-07	3.04E-08	3.95E-07	8.61E-07	5.76E-07	2.64E-08	3.80E-07	9.52E-07	1.33E-06	1.46E-06	1.46E-06	5.11E-04
3163	482900	3622900	Residential	100m grid	2.37E-07	4.46E-07	3.87E-08	2.94E-07	5.31E-07	4.62E-07	2.32E-08	3.02E-07	6.57E-07	4.40E-07	2.02E-08	2.90E-07	7.22E-07	1.02E-06	1.12E-06	1.12E-06	3.90E-04
3164	483000	3622900	Residential	100m grid	2.10E-07	3.99E-07	3.46E-08	2.62E-07	4.75E-07	4.13E-07	2.07E-08	2.70E-07	5.88E-07	3.93E-07	1.80E-08	2.59E-07	6.44E-07	9.08E-07	9.99E-07	9.99E-07	3.49E-04
3165	483100	3622900	Residential	100m grid	1.67E-07	3.14E-07	2.72E-08	2.07E-07	3.74E-07	3.25E-07	1.63E-08	2.12E-07	4.62E-07	3.09E-07	1.42E-08	2.04E-07	5.09E-07	7.15E-07	7.86E-07	7.86E-07	2.74E-04
3166	483200	3622900	Residential	100m grid	1.37E-07	2.52E-07	2.18E-08	1.66E-07	2.99E-07	2.60E-07	1.31E-08	1.70E-07	3.71E-07	2.48E-07	1.14E-08	1.63E-07	4.11E-07	5.73E-07	6.30E-07	6.30E-07	2.20E-04
3167	483300	3622900	Residential	100m grid	1.13E-07	2.05E-07	1.77E-08	1.35E-07	2.42E-07	2.11E-07	1.06E-08	1.38E-07	3.00E-07	2.01E-07	9.21E-09	1.32E-07	3.36E-07	4.64E-07	5.10E-07	5.10E-07	1.78E-04
3168	483400	3622900	Residential	100m grid	1.03E-07	1.81E-07	1.55E-08	1.19E-07	2.13E-07	1.85E-07	9.31E-09	1.21E-07	2.64E-07	1.77E-07	8.10E-09	1.16E-07	2.99E-07	4.08E-07	4.49E-07	4.49E-07	1.57E-04
3169	483500	3622900	Residential	100m grid	9.00E-08	1.54E-07	1.32E-08	1.02E-07	1.82E-07	1.58E-07	7.93E-09	1.03E-07	2.25E-07	1.50E-07	6.90E-09	9.91E-08	2.58E-07	3.47E-07	3.82E-07	3.82E-07	1.33E-04
3170	483600	3622900	Residential	100m grid	8.27E-08	1.37E-07	1.17E-08	9.05E-08	1.61E-07	1.40E-07	7.03E-09	9.16E-08	1.99E-07	1.33E-07	6.12E-09	8.79E-08	2.32E-07	3.08E-07	3.39E-07	3.39E-07	1.18E-04
3171	479300	3623000	Residential	100m grid	1.67E-08	1.68E-08	1.31E-09	1.11E-08	1.80E-08	1.57E-08	7.87E-10	1.02E-08	2.23E-08	1.49E-08	6.85E-10	9.84E-09	3.48E-08	3.45E-08	3.79E-08	3.79E-08	1.32E-05
3172	479400	3623000	Residential	100m grid	1.89E-08	1.89E-08	1.48E-09	1.26E-08	2.03E-08	1.76E-08	8.85E-10	1.15E-08	2.51E-08	1.68E-08	7.70E-10	1.11E-08	3.93E-08	3.88E-08	4.26E-08	4.26E-08	1.49E-05
3173	479500	3623000	Residential	100m grid	2.27E-08	2.25E-08	1.76E-09	1.50E-08	2.42E-08	2.10E-08	1.05E-09	1.37E-08	2.99E-08	2.00E-08	9.18E-10	1.32E-08	4.70E-08	4.62E-08	5.08E-08	5.08E-08	1.78E-05
3174	479600	3623000	Residential	100m grid	2.55E-08	2.52E-08	1.97E-09	1.68E-08	2.70E-08	2.35E-08	1.18E-09	1.54E-08	3.34E-08	2.24E-08	1.03E-09	1.48E-08	5.27E-08	5.17E-08	5.68E-08	5.68E-08	1.99E-05
3175	479700	3623000	Residential	100m grid	2.70E-08	2.65E-08	2.07E-09	1.76E-08	2.83E-08	2.46E-08	1.24E-09	1.61E-08	3.51E-08	2.35E-08	1.08E-09	1.55E-08	5.56E-08	5.42E-08	5.96E-08	5.96E-08	2.08E-05
3176	479800	3623000	Residential	100m grid	3.02E-08	2.95E-08	2.30E-09	1.96E-08	3.15E-08	2.74E-08	1.38E-09	1.79E-08	3.90E-08	2.61E-08	1.20E-09	1.72E-08	6.20E-08	6.03E-08	6.64E-08	6.64E-08	2.32E-05
3177	479900	3623000	Residential	100m grid	3.44E-08	3.35E-08	2.61E-09	2.23E-08	3.58E-08	3.11E-08	1.56E-09	2.03E-08	4.42E-08	2.96E-08	1.36E-09	1.95E-08	7.05E-08	6.84E-08	7.52E-08	7.52E-08	2.63E-05
3178	480000	3623000	Residential	100m grid	3.88E-08	3.76E-08	2.92E-09	2.50E-08	4.00E-08	3.48E-08	1.75E-09	2.28E-08	4.96E-08	3.32E-08	1.52E-09	2.19E-08	7.93E-08	7.66E-08	8.42E-08	8.42E-08	2.94E-05
3179	480100	3623000	Residential	100m grid	4.48E-08	4.32E-08	3.35E-09	2.87E-08	4.60E-08	4.00E-08	2.01E-09	2.61E-08	5.69E-08	3.81E-08	1.75E-09	2.51E-08	9.14E-08	8.80E-08	9.68E-08	9.68E-08	3.38E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
3181	480300	3623000	Residential	100m grid	6.42E-08	5.93E-08	4.55E-09	3.95E-08	6.24E-08	5.42E-08	2.72E-09	3.55E-08	7.72E-08	5.17E-08	2.37E-09	3.41E-08	1.28E-07	1.19E-07	1.31E-07	1.31E-07	4.58E-05
3182	480400	3623000	Residential	100m grid	7.68E-08	6.89E-08	5.25E-09	4.59E-08	7.20E-08	6.26E-08	3.14E-09	4.09E-08	8.91E-08	5.96E-08	2.74E-09	3.93E-08	1.51E-07	1.38E-07	1.51E-07	1.51E-07	5.29E-05
3183	480500	3623000	Residential	100m grid	9.38E-08	8.10E-08	6.11E-09	5.40E-08	8.38E-08	7.28E-08	3.66E-09	4.76E-08	1.04E-07	6.94E-08	3.18E-09	4.57E-08	1.81E-07	1.60E-07	1.76E-07	1.81E-07	6.16E-05
3184	480600	3623000	Residential	100m grid	1.18E-07	9.76E-08	7.27E-09	6.51E-08	9.97E-08	8.67E-08	4.35E-09	5.67E-08	1.23E-07	8.26E-08	3.79E-09	5.44E-08	2.23E-07	1.91E-07	2.10E-07	2.23E-07	7.33E-05
3185	480700	3623000	Residential	100m grid	1.52E-07	1.22E-07	8.97E-09	8.13E-08	1.23E-07	1.07E-07	5.37E-09	6.99E-08	1.52E-07	1.02E-07	4.67E-09	6.71E-08	2.83E-07	2.35E-07	2.59E-07	2.83E-07	9.11E-05
3186	480800	3623000	Residential	100m grid	2.03E-07	1.57E-07	1.14E-08	1.05E-07	1.57E-07	1.36E-07	6.84E-09	8.90E-08	1.94E-07	1.30E-07	5.95E-09	8.55E-08	3.72E-07	3.00E-07	3.30E-07	3.72E-07	1.22E-04
3188	482400	3623000	Residential	100m grid	5.63E-07	1.15E-06	1.01E-07	7.58E-07	1.38E-06	1.20E-06	6.04E-08	7.87E-07	1.71E-06	1.15E-06	5.26E-08	7.56E-07	1.82E-06	2.65E-06	2.91E-06	2.91E-06	1.02E-03
3191	482700	3623000	Residential	100m grid	2.73E-07	5.71E-07	5.01E-08	3.75E-07	6.87E-07	5.97E-07	3.00E-08	3.91E-07	8.50E-07	5.69E-07	2.61E-08	3.75E-07	8.94E-07	1.31E-06	1.45E-06	1.45E-06	5.05E-04
3192	482800	3623000	Residential	100m grid	2.13E-07	4.39E-07	3.84E-08	2.88E-07	5.27E-07	4.58E-07	2.30E-08	3.00E-07	6.52E-07	4.36E-07	2.00E-08	2.88E-07	6.91E-07	1.01E-06	1.11E-06	1.11E-06	3.87E-04
3193	482900	3623000	Residential	100m grid	1.65E-07	3.31E-07	2.89E-08	2.18E-07	3.97E-07	3.45E-07	1.73E-08	2.26E-07	4.91E-07	3.29E-07	1.51E-08	2.17E-07	5.26E-07	7.59E-07	8.35E-07	8.35E-07	2.91E-04
3194	483000	3623000	Residential	100m grid	1.41E-07	2.76E-07	2.40E-08	1.81E-07	3.29E-07	2.86E-07	1.44E-08	1.87E-07	4.07E-07	2.72E-07	1.25E-08	1.80E-07	4.41E-07	6.29E-07	6.92E-07	6.92E-07	2.42E-04
3195	483100	3623000	Residential	100m grid	1.44E-07	2.79E-07	2.43E-08	1.83E-07	3.33E-07	2.89E-07	1.45E-08	1.89E-07	4.12E-07	2.75E-07	1.26E-08	1.82E-07	4.48E-07	6.36E-07	7.00E-07	7.00E-07	2.44E-04
3196	483200	3623000	Residential	100m grid	1.07E-07	1.96E-07	1.69E-08	1.29E-07	2.32E-07	2.02E-07	1.01E-08	1.32E-07	2.88E-07	1.92E-07	8.83E-09	1.27E-07	3.20E-07	4.45E-07	4.89E-07	4.89E-07	1.71E-04
3197	483300	3623000	Residential	100m grid	9.55E-08	1.70E-07	1.46E-08	1.12E-07	2.01E-07	1.74E-07	8.76E-09	1.14E-07	2.48E-07	1.66E-07	7.62E-09	1.09E-07	2.80E-07	3.84E-07	4.22E-07	4.22E-07	1.47E-04
3198	483400	3623000	Residential	100m grid	8.52E-08	1.47E-07	1.26E-08	9.67E-08	1.73E-07	1.50E-07	7.55E-09	9.82E-08	2.14E-07	1.43E-07	6.57E-09	9.43E-08	2.45E-07	3.31E-07	3.64E-07	3.64E-07	1.27E-04
3199	483500	3623000	Residential	100m grid	7.74E-08	1.29E-07	1.11E-08	8.51E-08	1.52E-07	1.32E-07	6.62E-09	8.62E-08	1.88E-07	1.26E-07	5.76E-09	8.27E-08	2.18E-07	2.90E-07	3.19E-07	3.19E-07	1.11E-04
3200	483600	3623000	Residential	100m grid	7.12E-08	1.15E-07	9.83E-09	7.61E-08	1.35E-07	1.17E-07	5.89E-09	7.67E-08	1.67E-07	1.12E-07	5.13E-09	7.36E-08	1.96E-07	2.58E-07	2.84E-07	2.84E-07	9.91E-05
3201	479300	3623100	Residential	100m grid	1.62E-08	1.64E-08	1.29E-09	1.09E-08	1.77E-08	1.54E-08	7.73E-10	1.01E-08	2.19E-08	1.47E-08	6.73E-10	9.66E-09	3.39E-08	3.39E-08	3.72E-08	3.72E-08	1.30E-05
3202	479400	3623100	Residential	100m grid	1.87E-08	1.88E-08	1.48E-09	1.25E-08	2.03E-08	1.76E-08	8.84E-10	1.15E-08	2.51E-08	1.68E-08	7.70E-10	1.11E-08	3.90E-08	3.87E-08	4.26E-08	4.26E-08	1.49E-05
3203	479500	3623100	Residential	100m grid	2.12E-08	2.12E-08	1.66E-09	1.41E-08	2.28E-08	1.98E-08	9.95E-10	1.29E-08	2.82E-08	1.89E-08	8.66E-10	1.24E-08	4.40E-08	4.36E-08	4.79E-08	4.79E-08	1.67E-05
3204	479600	3623100	Residential	100m grid	2.37E-08	2.37E-08	1.86E-09	1.58E-08	2.55E-08	2.21E-08	1.11E-09	1.45E-08	3.15E-08	2.11E-08	9.68E-10	1.39E-08	4.93E-08	4.87E-08	5.36E-08	5.36E-08	1.87E-05
3205	479700	3623100	Residential	100m grid	2.88E-08	2.84E-08	2.21E-09	1.89E-08	3.03E-08	2.64E-08	1.32E-09	1.72E-08	3.75E-08	2.51E-08	1.15E-09	1.66E-08	5.94E-08	5.80E-08	6.38E-08	6.38E-08	2.23E-05
3206	479800	3623100	Residential	100m grid	2.94E-08	2.95E-08	2.31E-09	1.96E-08	3.17E-08	2.75E-08	1.38E-09	1.80E-08	3.92E-08	2.62E-08	1.20E-09	1.73E-08	6.13E-08	6.06E-08	6.67E-08	6.67E-08	2.33E-05
3207	479900	3623100	Residential	100m grid	3.34E-08	3.34E-08	2.61E-09	2.22E-08	3.59E-08	3.12E-08	1.57E-09	2.04E-08	4.44E-08	2.97E-08	1.36E-09	1.96E-08	6.95E-08	6.86E-08	7.54E-08	7.54E-08	2.63E-05
3208	480000	3623100	Residential	100m grid	3.77E-08	3.75E-08	2.93E-09	2.49E-08	4.02E-08	3.50E-08	1.76E-09	2.29E-08	4.98E-08	3.33E-08	1.53E-09	2.20E-08	7.82E-08	7.70E-08	8.47E-08	8.47E-08	2.96E-05
3209	480100	3623100	Residential	100m grid	4.34E-08	4.27E-08	3.33E-09	2.84E-08	4.57E-08	3.97E-08	1.99E-09	2.59E-08	5.65E-08	3.78E-08	1.74E-09	2.49E-08	8.94E-08	8.73E-08	9.60E-08	9.60E-08	3.35E-05
3212	480400	3623100	Residential	100m grid	7.82E-08	7.20E-08	5.52E-09	4.79E-08	7.57E-08	6.58E-08	3.31E-09	4.30E-08	9.37E-08	6.27E-08	2.88E-09	4.13E-08	1.56E-07	1.45E-07	1.59E-07	1.59E-07	5.56E-05
3213	480500	3623100	Residential	100m grid	9.53E-08	8.56E-08	6.52E-09	5.70E-08	8.95E-08	7.78E-08	3.91E-09	5.09E-08	1.11E-07	7.41E-08	3.40E-09	4.88E-08	1.87E-07	1.71E-07	1.88E-07	1.88E-07	6.57E-05
3214	480600	3623100	Residential	100m grid	1.19E-07	1.04E-07	7.88E-09	6.95E-08	1.08E-07	9.40E-08	4.72E-09	6.15E-08	1.34E-07	8.95E-08	4.11E-09	5.90E-08	2.32E-07	2.07E-07	2.27E-07	2.32E-07	7.94E-05
3215	480700	3623100	Residential	100m grid	1.55E-07	1.33E-07	9.96E-09	8.84E-08	1.37E-07	1.19E-07	5.96E-09	7.77E-08	1.69E-07	1.13E-07	5.19E-09	7.46E-08	2.98E-07	2.61E-07	2.87E-07	2.98E-07	1.00E-04
3219	482400	3623100	Residential	100m grid	3.50E-07	8.57E-07	7.62E-08	5.62E-07	1.05E-06	9.08E-07	4.56E-08	5.94E-07	1.29E-06	8.65E-07	3.97E-08	5.70E-07	1.28E-06	2.00E-06	2.20E-06	2.20E-06	7.68E-04
3220	482500	3623100	Residential	100m grid	2.71E-07	6.45E-07	5.72E-08	4.23E-07	7.84E-07	6.82E-07	3.42E-08	4.46E-07	9.71E-07	6.49E-07	2.98E-08	4.28E-07	9.73E-07	1.50E-06	1.65E-06	1.65E-06	5.76E-04
3221	482600	3623100	Residential	100m grid	1.98E-07	4.52E-07	4.00E-08	2.97E-07	5.49E-07	4.77E-07	2.40E-08	3.12E-07	6.79E-07	4.54E-07	2.09E-08	2.99E-07	6.90E-07	1.05E-06	1.15E-06	1.15E-06	4.03E-04
3222	482700	3623100	Residential	100m grid	1.68E-07	3.71E-07	3.27E-08	2.44E-07	4.49E-07	3.90E-07	1.96E-08	2.55E-07	5.55E-07	3.72E-07	1.71E-08	2.45E-07	5.72E-07	8.59E-07	9.44E-07	9.44E-07	3.30E-04
3223	482800	3623100	Residential	100m grid	1.64E-07	3.54E-07	3.11E-08	2.32E-07	4.27E-07	3.71E-07	1.86E-08	2.43E-07	5.28E-07	3.54E-07	1.62E-08	2.33E-07	5.49E-07	8.17E-07	8.98E-07	8.98E-07	3.14E-04
3224	482900	3623100	Residential	100m grid	1.24E-07	2.54E-07	2.23E-08	1.67E-07	3.05E-07	2.65E-07	1.33E-08	1.74E-07	3.78E-07	2.53E-07	1.16E-08	1.67E-07	4.00E-07	5.84E-07	6.42E-07	6.42E-07	2.24E-04
3225	483000	3623100	Residential	100m grid	1.07E-07	2.13E-07	1.85E-08	1.40E-07	2.54E-07	2.21E-07	1.11E-08	1.45E-07	3.15E-07	2.11E-07	9.66E-09	1.39E-07	3.38E-07	4.86E-07	5.35E-07	5.35E-07	1.87E-04
3226	483100	3623100	Residential	100m grid	1.04E-07	1.99E-07	1.73E-08	1.31E-07	2.37E-07	2.06E-07	1.04E-08	1.35E-07	2.94E-07	1.97E-07	9.02E-09	1.30E-07	3.21E-07	4.54E-07	4.99E-07	4.99E-07	1.74E-04
3227	483200	3623100	Residential	100m grid	9.23E-08	1.70E-07	1.47E-08	1.12E-07	2.02E-07	1.75E-07	8.81E-09	1.15E-07	2.50E-07	1.67E-07	7.67E-09	1.10E-07	2.77E-07	3.86E-07	4.24E-07	4.24E-07	1.48E-04
3228	483300	3623100	Residential	100m grid	7.62E-08	1.36E-07	1.17E-08	8.96E-08	1.61E-07	1.40E-07	7.02E-09	9.15E-08	1.99E-07	1.33E-07	6.11E-09	8.78E-08	2.24E-07	3.08E-07	3.38E-07	3.38E-07	1.18E-04
3229	483400	3623100	Residential	100m grid	6.93E-08	1.20E-07	1.03E-08	7.90E-08	1.41E-07	1.23E-07	6.17E-09	8.03E-08	1.75E-07	1.17E-07	5.37E-09	7.71E-08	2.00E-07	2.70E-07	2.97E-07	2.97E-07	1.04E-04
3230	483500	3623100	Residential	100m grid	6.34E-08	1.07E-07	9.12E-09	7.02E-08	1.25E-07	1.09E-07	5.46E-09	7.11E-08	1.55E-07	1.04E-07	4.75E-09	6.82E-08	1.79E-07	2.39E-07	2.63E-07	2.63E-07	9.19E-05
3231	483600	3623100	Residential	100m grid	5.86E-08	9.59E-08	8.17E-09	6.31E-08	1.12E-07	9.74E-08	4.89E-09	6.37E-08	1.39E-07	9.28E-08	4.26E-09	6.12E-08	1.63E-07	2.14E-07	2.36E-07	2.36E-07	8.24E-05
3232	479300	3623200	Residential	100m grid	1.97E-08	1.77E-08	1.35E-09	1.18E-08	1.86E-08	1.61E-08	8.10E-10	1.05E-08	2.30E-08	1.54E-08	7.05E-10	1.01E-08	3.88E-08	3.55E-08	3.90E-08	3.90E-08	1.36E-05
3233	479400	3623200	Residential	100m grid	2.22E-08	1.99E-08	1.51E-09	1.32E-08	2.07E-08	1.80E-08	9.05E-10	1.18E-08	2.56E-08	1.72E-08	7.88E-10	1.13E-08	4.36E-08	3.96E-08	4.36E-08	4.36E-08	1.52E-05
3234	479500	3623200	Residential	100m grid	2.64E-08	2.34E-08	1.77E-09	1.56E-08	2.43E-08	2.12E-08	1.06E-09	1.38E-08	3.01E-08	2.01E-08	9.25E-10	1.33E-08	5.16E-08	4.65E-08	5.12E-08	5.16E-08	1.79E-05
3235	479600	3623200	Residential	100m grid	3.07E-08	2.71E-08	2.05E-09	1.80E-08	2.82E-08	2.45E-08	1.23E-09	1.60E-08	3.49E-08	2.33E-08	1.07E-09	1.54E-08	5.98E-08	5.39E-08	5.92E-08	5.98E-08	2.07E-05
3236	479700	3623200	Residential	100m grid	3.26E-08	2.88E-08	2.18E-09	1.92E-08	3.00E-08	2.60E-08	1.31E-09	1.70E-08	3.71E-08	2.48E-08	1.14E-09	1.64E-08	6.35E-08	5.73E-08	6.30E-08	6.35E-08	2.20E-05
3237	479800	3623200	Residential	100m grid	3.79E-08	3.37E-08	2.56E-09	2.24E-08	3.50E-08	3.05E-08	1.53E-09	1.99E-08	4.34E-08	2.90E-08	1.33E-09	1.91E-08	7.42E-08	6.70E-08	7.37E-08	7.42E-08	2.57E-05
3238	479900	3623200	Residential	100m grid	4.13E-08	3.68E-08	2.79E-09	2.45E-08	3.83E-08	3.33E-08	1.67E-09	2.18E-08	4.74E-08	3.17E-08	1.46E-09	2.09E-08	8.08E-08	7.33E-08	8.06E-08	8.08E-08	2.82E-05
3239	480000	3623200	Residential	100m grid	4.35E-08	3.91E-08	2.98E-09	2.61E-08	4.09E-08	3.56E-08	1.79E-09	2.33E-08	5.06E-08	3.39E-08	1.55E-09	2.23E-08	8.56E-08	7.82E-08	8.60E-08	8.60E-08	3.01E-05
3240	480100	3623200	Residential	100m grid	4.87E-08	4.41E-08	3.37E-09	2.94E-08	4.62E-08	4.02E-08	2.02E-09	2.63E-08	5.72E-08	3.83E-08	1.76E-09	2.52E-08	9.62E-08	8.84E-08	9.73E-08	9.73E-08	3.40E-05
3241	480200	3623200	Residential	100m grid	5.88E-08	5.31E-08	4.05E-09	3.54E-08	5.56E-08	4.83E-08	2.43E-09	3.16E-08	6.88E-08	4.61E-08	2.11E-09	3.04E-08	1.16E-07	1.06E-07	1.17E-07	1.17E-07	4.09E-05
3244	480500	3623200	Residential	100m grid	1.05E-07	9.23E-08	6.98E-09	6.15E-08	9.58E-08	8.33E-08	4.18E-09	5.44E-08	1.19E-07	7.93E-08	3.64E-09	5.23E-08	2.04E-07	1.83E-07	2.02E-07	2.04E-07	7.04E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 16-30	HARP Output, Exposure Scenario A: Worker Cancer Risk	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 16-30	HARP Output, Exposure Scenario B: Worker Cancer Risk	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 16-30	HARP Output, Exposure Scenario C: Worker Cancer Risk	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario A	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario B	Health Risk Quantified by Receptor Type: Cancer Risk, Scenario C	Health Risk Quantified by Receptor Type: Max Cancer Risk	Health Risk Quantified by Receptor Type: Max Chronic Hazard Index
3250	482300	3623200	Residential	100m grid	2.76E-07	7.82E-07	7.04E-08	5.13E-07	9.65E-07	8.39E-07	4.21E-08	5.49E-07	1.19E-06	7.99E-07	3.67E-08	5.27E-07	1.13E-06	1.85E-06	2.03E-06	2.03E-06	7.09E-04
3251	482400	3623200	Residential	100m grid	2.03E-07	5.43E-07	4.87E-08	3.56E-07	6.68E-07	5.80E-07	2.91E-08	3.79E-07	8.26E-07	5.53E-07	2.54E-08	3.64E-07	7.95E-07	1.28E-06	1.40E-06	1.40E-06	4.90E-04
3252	482500	3623200	Residential	100m grid	1.68E-07	4.27E-07	3.81E-08	2.80E-07	5.22E-07	4.54E-07	2.28E-08	2.97E-07	6.46E-07	4.32E-07	1.98E-08	2.85E-07	6.33E-07	9.99E-07	1.10E-06	1.10E-06	3.84E-04
3253	482600	3623200	Residential	100m grid	1.40E-07	3.38E-07	3.00E-08	2.22E-07	4.12E-07	3.58E-07	1.80E-08	2.34E-07	5.10E-07	3.41E-07	1.57E-08	2.25E-07	5.08E-07	7.88E-07	8.66E-07	8.66E-07	3.03E-04
3254	482700	3623200	Residential	100m grid	1.21E-07	2.77E-07	2.45E-08	1.82E-07	3.36E-07	2.92E-07	1.47E-08	1.91E-07	4.16E-07	2.78E-07	1.28E-08	1.84E-07	4.23E-07	6.43E-07	7.07E-07	7.07E-07	2.47E-04
3255	482800	3623200	Residential	100m grid	1.14E-07	2.47E-07	2.17E-08	1.62E-07	2.98E-07	2.59E-07	1.30E-08	1.69E-07	3.69E-07	2.47E-07	1.13E-08	1.63E-07	3.83E-07	5.70E-07	6.27E-07	6.27E-07	2.19E-04
3256	482900	3623200	Residential	100m grid	1.00E-07	2.08E-07	1.82E-08	1.36E-07	2.50E-07	2.17E-07	1.09E-08	1.42E-07	3.09E-07	2.07E-07	9.48E-09	1.36E-07	3.26E-07	4.77E-07	5.25E-07	5.25E-07	1.83E-04
3257	483000	3623200	Residential	100m grid	8.37E-08	1.66E-07	1.45E-08	1.09E-07	1.99E-07	1.73E-07	8.69E-09	1.13E-07	2.46E-07	1.65E-07	7.57E-09	1.09E-07	2.65E-07	3.81E-07	4.19E-07	4.19E-07	1.46E-04
3258	483100	3623200	Residential	100m grid	7.68E-08	1.46E-07	1.27E-08	9.61E-08	1.74E-07	1.51E-07	7.59E-09	9.89E-08	2.15E-07	1.44E-07	6.61E-09	9.49E-08	2.36E-07	3.33E-07	3.66E-07	3.66E-07	1.28E-04
3259	483200	3623200	Residential	100m grid	7.26E-08	1.33E-07	1.15E-08	8.72E-08	1.57E-07	1.37E-07	6.86E-09	8.93E-08	1.94E-07	1.30E-07	5.97E-09	8.57E-08	2.17E-07	3.00E-07	3.30E-07	3.30E-07	1.15E-04
3260	483300	3623200	Residential	100m grid	6.76E-08	1.19E-07	1.02E-08	7.84E-08	1.41E-07	1.22E-07	6.13E-09	7.99E-08	1.74E-07	1.16E-07	5.34E-09	7.67E-08	1.97E-07	2.69E-07	2.96E-07	2.96E-07	1.03E-04
3261	483400	3623200	Residential	100m grid	5.76E-08	9.88E-08	8.47E-09	6.50E-08	1.16E-07	1.01E-07	5.07E-09	6.60E-08	1.44E-07	9.62E-08	4.42E-09	6.34E-08	1.65E-07	2.22E-07	2.44E-07	2.44E-07	8.54E-05
3262	483500	3623200	Residential	100m grid	5.30E-08	8.84E-08	7.56E-09	5.82E-08	1.04E-07	9.01E-08	4.52E-09	5.89E-08	1.28E-07	8.58E-08	3.94E-09	5.66E-08	1.49E-07	1.98E-07	2.18E-07	2.18E-07	7.61E-05
3263	483600	3623200	Residential	100m grid	4.92E-08	8.01E-08	6.82E-09	5.28E-08	9.36E-08	8.14E-08	4.09E-09	5.32E-08	1.16E-07	7.75E-08	3.56E-09	5.11E-08	1.36E-07	1.79E-07	1.97E-07	1.97E-07	6.88E-05
3264	479300	3623300	Residential	100m grid	2.50E-08	2.04E-08	1.51E-09	1.36E-08	2.07E-08	1.80E-08	9.04E-10	1.18E-08	2.56E-08	1.71E-08	7.87E-10	1.13E-08	4.68E-08	3.96E-08	4.36E-08	4.68E-08	1.52E-05
3265	479400	3623300	Residential	100m grid	2.75E-08	2.24E-08	1.66E-09	1.49E-08	2.27E-08	1.97E-08	9.92E-10	1.29E-08	2.81E-08	1.88E-08	8.63E-10	1.24E-08	5.15E-08	4.34E-08	4.78E-08	5.15E-08	1.67E-05
3266	479500	3623300	Residential	100m grid	3.35E-08	2.72E-08	2.01E-09	1.82E-08	2.76E-08	2.40E-08	1.21E-09	1.57E-08	3.42E-08	2.29E-08	1.05E-09	1.51E-08	6.27E-08	5.28E-08	5.81E-08	6.27E-08	2.03E-05
3267	479600	3623300	Residential	100m grid	3.70E-08	3.02E-08	2.24E-09	2.02E-08	3.07E-08	2.67E-08	1.34E-09	1.75E-08	3.80E-08	2.54E-08	1.17E-09	1.68E-08	6.94E-08	5.87E-08	6.46E-08	6.94E-08	2.26E-05
3268	479700	3623300	Residential	100m grid	4.00E-08	3.23E-08	2.38E-09	2.15E-08	3.27E-08	2.84E-08	1.43E-09	1.86E-08	4.05E-08	2.71E-08	1.24E-09	1.78E-08	7.46E-08	6.25E-08	6.88E-08	7.46E-08	2.40E-05
3269	479800	3623300	Residential	100m grid	4.29E-08	3.44E-08	2.53E-09	2.30E-08	3.48E-08	3.02E-08	1.52E-09	1.98E-08	4.30E-08	2.88E-08	1.32E-09	1.90E-08	7.98E-08	6.65E-08	7.31E-08	7.98E-08	2.57E-05
3270	479900	3623300	Residential	100m grid	4.96E-08	4.13E-08	3.08E-09	2.75E-08	4.22E-08	3.67E-08	1.84E-09	2.40E-08	5.22E-08	3.49E-08	1.60E-09	2.30E-08	9.39E-08	8.07E-08	8.88E-08	9.39E-08	3.10E-05
3271	480000	3623300	Residential	100m grid	5.42E-08	4.35E-08	3.21E-09	2.90E-08	4.40E-08	3.82E-08	1.92E-09	2.50E-08	5.44E-08	3.64E-08	1.67E-09	2.40E-08	1.01E-07	8.41E-08	9.25E-08	1.01E-07	3.25E-05
3272	480100	3623300	Residential	100m grid	6.09E-08	4.89E-08	3.61E-09	3.26E-08	4.95E-08	4.30E-08	2.16E-09	2.81E-08	6.12E-08	4.10E-08	1.88E-09	2.70E-08	1.13E-07	9.46E-08	1.04E-07	1.13E-07	3.65E-05
3273	480200	3623300	Residential	100m grid	7.05E-08	5.69E-08	4.20E-09	3.80E-08	5.76E-08	5.01E-08	2.52E-09	3.28E-08	7.13E-08	4.77E-08	2.19E-09	3.15E-08	1.32E-07	1.10E-07	1.21E-07	1.32E-07	4.23E-05
3274	480300	3623300	Residential	100m grid	8.41E-08	6.87E-08	5.10E-09	4.59E-08	6.99E-08	6.08E-08	3.05E-09	3.97E-08	8.65E-08	5.79E-08	2.66E-09	3.82E-08	1.58E-07	1.34E-07	1.47E-07	1.58E-07	5.14E-05
3284	482300	3623300	Residential	100m grid	1.78E-07	5.22E-07	4.71E-08	3.42E-07	6.46E-07	5.61E-07	2.82E-08	3.67E-07	7.99E-07	5.35E-07	2.45E-08	3.53E-07	7.47E-07	1.24E-06	1.36E-06	1.36E-06	4.75E-04
3285	482400	3623300	Residential	100m grid	1.49E-07	4.03E-07	3.61E-08	2.64E-07	4.95E-07	4.30E-07	2.16E-08	2.81E-07	6.13E-07	4.10E-07	1.88E-08	2.70E-07	5.87E-07	9.47E-07	1.04E-06	1.04E-06	3.64E-04
3286	482500	3623300	Residential	100m grid	1.26E-07	3.17E-07	2.83E-08	2.08E-07	3.88E-07	3.37E-07	1.69E-08	2.20E-07	4.80E-07	3.21E-07	1.47E-08	2.12E-07	4.72E-07	7.42E-07	8.15E-07	8.15E-07	2.85E-04
3287	482600	3623300	Residential	100m grid	1.10E-07	2.58E-07	2.29E-08	1.70E-07	3.14E-07	2.73E-07	1.37E-08	1.79E-07	3.89E-07	2.60E-07	1.19E-08	1.71E-07	3.92E-07	6.01E-07	6.61E-07	6.61E-07	2.31E-04
3288	482700	3623300	Residential	100m grid	9.73E-08	2.14E-07	1.88E-08	1.40E-07	2.58E-07	2.24E-07	1.13E-08	1.47E-07	3.19E-07	2.14E-07	9.81E-09	1.41E-07	3.30E-07	4.94E-07	5.43E-07	5.43E-07	1.90E-04
3289	482800	3623300	Residential	100m grid	8.94E-08	1.85E-07	1.62E-08	1.21E-07	2.22E-07	1.93E-07	9.69E-09	1.26E-07	2.75E-07	1.84E-07	8.44E-09	1.21E-07	2.90E-07	4.25E-07	4.67E-07	4.67E-07	1.63E-04
3290	482900	3623300	Residential	100m grid	8.17E-08	1.60E-07	1.39E-08	1.05E-07	1.91E-07	1.66E-07	8.34E-09	1.09E-07	2.36E-07	1.58E-07	7.26E-09	1.04E-07	2.55E-07	3.65E-07	4.02E-07	4.02E-07	1.40E-04
3291	483000	3623300	Residential	100m grid	7.18E-08	1.34E-07	1.16E-08	8.81E-08	1.59E-07	1.38E-07	6.94E-09	9.04E-08	1.97E-07	1.32E-07	6.05E-09	8.68E-08	2.17E-07	3.04E-07	3.35E-07	3.35E-07	1.17E-04
3292	483100	3623300	Residential	100m grid	6.47E-08	1.15E-07	9.95E-09	7.60E-08	1.36E-07	1.19E-07	5.96E-09	7.75E-08	1.69E-07	1.13E-07	5.19E-09	7.45E-08	1.90E-07	2.61E-07	2.87E-07	2.87E-07	1.00E-04
3293	483200	3623300	Residential	100m grid	6.00E-08	1.03E-07	8.84E-09	6.79E-08	1.21E-07	1.05E-07	5.30E-09	6.90E-08	1.50E-07	1.00E-07	4.61E-09	6.62E-08	1.72E-07	2.32E-07	2.55E-07	2.55E-07	8.91E-05
3294	483300	3623300	Residential	100m grid	5.63E-08	9.38E-08	8.02E-09	6.18E-08	1.10E-07	9.56E-08	4.80E-09	6.25E-08	1.36E-07	9.11E-08	4.18E-09	6.00E-08	1.58E-07	2.10E-07	2.31E-07	2.31E-07	8.08E-05
3295	483400	3623300	Residential	100m grid	5.35E-08	8.68E-08	7.39E-09	5.72E-08	1.01E-07	8.81E-08	4.42E-09	5.76E-08	1.25E-07	8.39E-08	3.85E-09	5.53E-08	1.48E-07	1.94E-07	2.13E-07	2.13E-07	7.44E-05
3296	483500	3623300	Residential	100m grid	4.95E-08	7.82E-08	6.64E-09	5.15E-08	9.10E-08	7.91E-08	3.97E-09	5.17E-08	1.13E-07	7.54E-08	3.46E-09	4.97E-08	1.34E-07	1.74E-07	1.91E-07	1.91E-07	6.69E-05
3297	483600	3623300	Residential	100m grid	4.45E-08	6.87E-08	5.81E-09	4.53E-08	7.97E-08	6.93E-08	3.48E-09	4.53E-08	9.86E-08	6.60E-08	3.03E-09	4.35E-08	1.19E-07	1.52E-07	1.68E-07	1.68E-07	5.85E-05
3298	479300	3623400	Residential	100m grid	2.66E-08	2.19E-08	1.63E-09	1.46E-08	2.23E-08	1.94E-08	9.75E-10	1.27E-08	2.76E-08	1.85E-08	8.48E-10	1.22E-08	5.01E-08	4.27E-08	4.70E-08	5.01E-08	1.64E-05
3299	479400	3623400	Residential	100m grid	2.95E-08	2.42E-08	1.80E-09	1.62E-08	2.46E-08	2.14E-08	1.08E-09	1.40E-08	3.05E-08	2.04E-08	9.37E-10	1.35E-08	5.55E-08	4.71E-08	5.18E-08	5.55E-08	1.81E-05
3300	479500	3623400	Residential	100m grid	3.43E-08	2.79E-08	2.07E-09	1.86E-08	2.83E-08	2.46E-08	1.24E-09	1.61E-08	3.51E-08	2.35E-08	1.08E-09	1.55E-08	6.43E-08	5.42E-08	5.96E-08	6.43E-08	2.08E-05
3301	479600	3623400	Residential	100m grid	3.97E-08	3.21E-08	2.37E-09	2.14E-08	3.25E-08	2.83E-08	1.42E-09	1.85E-08	4.03E-08	2.69E-08	1.24E-09	1.78E-08	7.42E-08	6.22E-08	6.84E-08	7.42E-08	2.39E-05
3302	479700	3623400	Residential	100m grid	4.37E-08	3.63E-08	2.71E-09	2.42E-08	3.71E-08	3.23E-08	1.62E-09	2.11E-08	4.59E-08	3.07E-08	1.41E-09	2.03E-08	8.28E-08	7.10E-08	7.81E-08	8.28E-08	2.73E-05
3303	479800	3623400	Residential	100m grid	4.87E-08	3.92E-08	2.90E-09	2.62E-08	3.98E-08	3.46E-08	1.74E-09	2.26E-08	4.92E-08	3.29E-08	1.51E-09	2.17E-08	9.08E-08	7.61E-08	8.37E-08	9.08E-08	2.92E-05
3304	479900	3623400	Residential	100m grid	5.37E-08	4.44E-08	3.30E-09	2.96E-08	4.53E-08	3.94E-08	1.98E-09	2.58E-08	5.61E-08	3.75E-08	1.72E-09	2.47E-08	1.01E-07	8.67E-08	9.53E-08	1.01E-07	3.33E-05
3305	480000	3623400	Residential	100m grid	6.01E-08	4.97E-08	3.70E-09	3.32E-08	5.07E-08	4.41E-08	2.21E-09	2.88E-08	6.28E-08	4.20E-08	1.93E-09	2.77E-08	1.13E-07	9.70E-08	1.07E-07	1.13E-07	3.73E-05
3306	480100	3623400	Residential	100m grid	6.59E-08	5.30E-08	3.91E-09	3.54E-08	5.37E-08	4.66E-08	2.34E-09	3.05E-08	6.64E-08	4.44E-08	2.04E-09	2.93E-08	1.23E-07	1.03E-07	1.13E-07	1.23E-07	3.94E-05
3307	480200	3623400	Residential	100m grid	7.62E-08	6.16E-08	4.55E-09	4.11E-08	6.25E-08	5.43E-08	2.73E-09	3.55E-08	7.73E-08	5.17E-08	2.37E-09	3.41E-08	1.42E-07	1.19E-07	1.31E-07	1.42E-07	4.59E-05
3308	480300	3623400	Residential	100m grid	8.80E-08	7.36E-08	5.49E-09	4.91E-08	7.53E-08	6.55E-08	3.29E-09	4.28E-08	9.32E-08	6.24E-08	2.86E-09	4.11E-08	1.67E-07	1.44E-07	1.58E-07	1.67E-07	5.53E-05
3309	480400	3623400	Residential	100m grid	1.03E-07	8.81E-08	6.62E-09	5.88E-08	9.08E-08	7.89E-08	3.96E-09	5.16E-08	1.12E-07	7.52E-08	3.45E-09	4.96E-08	1.98E-07	1.74E-07	1.91E-07	1.98E-07	6.67E-05
3317	482200	3623400	Residential	100m grid	1.80E-07	5.37E-07	4.85E-08	3.52E-07	6.65E-07	5.78E-07	2.90E-08	3.78E-07	8.23E-07	5.51E-07	2.53E-08	3.63E-07	7.66E-07	1.27E-06	1.40E-06	1.40E-06	4.89E-04
3318	482300	3623400	Residential	100m grid	1.53E-07	4.05E-07	3.62E-08	2.65E-07	4.97E-07	4.32E-07	2.17E-08	2.82E-07	6.15E-07	4.11E-07	1.89E-08	2.71E-07	5.94E-07	9.50E-07	1.04E-06	1.04E-06	3.65E-04
3319	482400	3623400	Residential	100m grid	1.29E-07	3.09E-07	2.75E-08	2.03E-07	3.76E-07	3.27E-07	1.64E-08	2.14E-07	4.66E-07	3.12E-07	1.43E-08	2.06E-07	4.66E-07	7.20E-07	7.92E-07	7.92E-07	2.77E-04

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3320	482500	3623400	Residential	100m grid	1.10E-07	2.41E-07	2.12E-08	1.58E-07	2.91E-07	2.53E-07	1.27E-08	1.66E-07	3.61E-07	2.41E-07	1.11E-08	1.59E-07	3.73E-07	5.57E-07	6.13E-07	6.13E-07	2.14E-04
3321	482600	3623400	Residential	100m grid	9.96E-08	2.04E-07	1.79E-08	1.34E-07	2.45E-07	2.13E-07	1.07E-08	1.39E-07	3.03E-07	2.03E-07	9.31E-09	1.34E-07	3.22E-07	4.69E-07	5.15E-07	5.15E-07	1.80E-04
3322	482700	3623400	Residential	100m grid	8.67E-08	1.67E-07	1.45E-08	1.10E-07	1.99E-07	1.73E-07	8.68E-09	1.13E-07	2.46E-07	1.65E-07	7.56E-09	1.09E-07	2.68E-07	3.80E-07	4.18E-07	4.18E-07	1.46E-04
3323	482800	3623400	Residential	100m grid	7.81E-08	1.43E-07	1.23E-08	9.39E-08	1.69E-07	1.47E-07	7.39E-09	9.62E-08	2.09E-07	1.40E-07	6.43E-09	9.24E-08	2.33E-07	3.24E-07	3.56E-07	3.56E-07	1.24E-04
3324	482900	3623400	Residential	100m grid	7.21E-08	1.27E-07	1.09E-08	8.33E-08	1.49E-07	1.30E-07	6.52E-09	8.48E-08	1.85E-07	1.24E-07	5.67E-09	8.15E-08	2.09E-07	2.85E-07	3.14E-07	3.14E-07	1.10E-04
3325	483000	3623400	Residential	100m grid	6.65E-08	1.12E-07	9.63E-09	7.40E-08	1.32E-07	1.15E-07	5.76E-09	7.50E-08	1.63E-07	1.09E-07	5.02E-09	7.21E-08	1.89E-07	2.53E-07	2.78E-07	2.78E-07	9.70E-05
3326	483100	3623400	Residential	100m grid	5.92E-08	9.64E-08	8.21E-09	6.35E-08	1.13E-07	9.79E-08	4.92E-09	6.40E-08	1.39E-07	9.33E-08	4.28E-09	6.15E-08	1.64E-07	2.15E-07	2.37E-07	2.37E-07	8.28E-05
3327	483200	3623400	Residential	100m grid	5.45E-08	8.62E-08	7.32E-09	5.68E-08	1.00E-07	8.72E-08	4.38E-09	5.70E-08	1.24E-07	8.31E-08	3.81E-09	5.48E-08	1.48E-07	1.92E-07	2.11E-07	2.11E-07	7.37E-05
3328	483300	3623400	Residential	100m grid	5.07E-08	7.81E-08	6.61E-09	5.15E-08	9.06E-08	7.88E-08	3.96E-09	5.15E-08	1.12E-07	7.50E-08	3.44E-09	4.95E-08	1.35E-07	1.73E-07	1.91E-07	1.91E-07	6.66E-05
3329	483400	3623400	Residential	100m grid	4.72E-08	7.12E-08	6.00E-09	4.69E-08	8.23E-08	7.15E-08	3.59E-09	4.68E-08	1.02E-07	6.82E-08	3.13E-09	4.49E-08	1.24E-07	1.57E-07	1.73E-07	1.73E-07	6.05E-05
3330	483500	3623400	Residential	100m grid	4.49E-08	6.65E-08	5.59E-09	4.39E-08	7.67E-08	6.67E-08	3.35E-09	4.36E-08	9.49E-08	6.35E-08	2.92E-09	4.19E-08	1.17E-07	1.47E-07	1.61E-07	1.61E-07	5.63E-05
3331	483600	3623400	Residential	100m grid	4.24E-08	6.17E-08	5.17E-09	4.07E-08	7.10E-08	6.17E-08	3.10E-09	4.03E-08	8.78E-08	5.88E-08	2.70E-09	3.87E-08	1.09E-07	1.36E-07	1.49E-07	1.49E-07	5.21E-05
3332	479300	3623500	Residential	100m grid	2.57E-08	2.27E-08	1.72E-09	1.51E-08	2.36E-08	2.05E-08	1.03E-09	1.34E-08	2.92E-08	1.95E-08	8.96E-10	1.29E-08	5.01E-08	4.51E-08	4.96E-08	5.01E-08	1.73E-05
3333	479400	3623500	Residential	100m grid	3.05E-08	2.66E-08	2.01E-09	1.77E-08	2.75E-08	2.39E-08	1.20E-09	1.57E-08	3.41E-08	2.28E-08	1.05E-09	1.50E-08	5.91E-08	5.27E-08	5.79E-08	5.91E-08	2.02E-05
3334	479500	3623500	Residential	100m grid	3.61E-08	3.11E-08	2.34E-09	2.07E-08	3.21E-08	2.79E-08	1.40E-09	1.82E-08	3.97E-08	2.66E-08	1.22E-09	1.75E-08	6.95E-08	6.14E-08	6.75E-08	6.95E-08	2.36E-05
3335	479600	3623500	Residential	100m grid	4.10E-08	3.51E-08	2.64E-09	2.34E-08	3.62E-08	3.15E-08	1.58E-09	2.06E-08	4.49E-08	3.00E-08	1.38E-09	1.98E-08	7.87E-08	6.93E-08	7.62E-08	7.87E-08	2.66E-05
3336	479700	3623500	Residential	100m grid	4.45E-08	3.87E-08	2.92E-09	2.58E-08	4.01E-08	3.48E-08	1.75E-09	2.28E-08	4.96E-08	3.32E-08	1.52E-09	2.19E-08	8.61E-08	7.66E-08	8.43E-08	8.61E-08	2.94E-05
3337	479800	3623500	Residential	100m grid	4.88E-08	4.25E-08	3.21E-09	2.83E-08	4.40E-08	3.83E-08	1.92E-09	2.50E-08	5.45E-08	3.65E-08	1.67E-09	2.40E-08	9.45E-08	8.42E-08	9.26E-08	9.45E-08	3.23E-05
3338	479900	3623500	Residential	100m grid	5.37E-08	4.70E-08	3.56E-09	3.13E-08	4.88E-08	4.24E-08	2.13E-09	2.77E-08	6.03E-08	4.04E-08	1.85E-09	2.66E-08	1.04E-07	9.33E-08	1.03E-07	1.04E-07	3.58E-05
3340	480100	3623500	Residential	100m grid	6.61E-08	5.80E-08	4.39E-09	3.87E-08	6.03E-08	5.24E-08	2.63E-09	3.42E-08	7.46E-08	4.99E-08	2.29E-09	3.29E-08	1.28E-07	1.15E-07	1.27E-07	1.28E-07	4.43E-05
3341	480200	3623500	Residential	100m grid	7.27E-08	6.46E-08	4.91E-09	4.31E-08	6.74E-08	5.86E-08	2.94E-09	3.83E-08	8.34E-08	5.58E-08	2.56E-09	3.68E-08	1.42E-07	1.29E-07	1.42E-07	1.42E-07	4.95E-05
3342	480300	3623500	Residential	100m grid	8.16E-08	7.62E-08	5.86E-09	5.07E-08	8.04E-08	6.99E-08	3.51E-09	4.57E-08	9.95E-08	6.66E-08	3.06E-09	4.39E-08	1.64E-07	1.54E-07	1.69E-07	1.69E-07	5.91E-05
3343	480400	3623500	Residential	100m grid	9.22E-08	8.96E-08	6.96E-09	5.95E-08	9.55E-08	8.30E-08	4.17E-09	5.43E-08	1.18E-07	7.91E-08	3.63E-09	5.21E-08	1.89E-07	1.83E-07	2.01E-07	2.01E-07	7.01E-05
3344	480500	3623500	Residential	100m grid	1.04E-07	1.07E-07	8.45E-09	7.13E-08	1.16E-07	1.01E-07	5.06E-09	6.59E-08	1.43E-07	9.60E-08	4.41E-09	6.33E-08	2.20E-07	2.22E-07	2.44E-07	2.44E-07	8.52E-05
3350	482100	3623500	Residential	100m grid	2.43E-07	6.94E-07	6.25E-08	4.55E-07	8.57E-07	7.45E-07	3.74E-08	4.87E-07	1.06E-06	7.10E-07	3.26E-08	4.68E-07	1.00E-06	1.64E-06	1.80E-06	1.80E-06	6.30E-04
3351	482200	3623500	Residential	100m grid	1.79E-07	4.53E-07	4.04E-08	2.97E-07	5.54E-07	4.81E-07	2.42E-08	3.15E-07	6.85E-07	4.59E-07	2.10E-08	3.02E-07	6.72E-07	1.06E-06	1.17E-06	1.17E-06	4.07E-04
3352	482300	3623500	Residential	100m grid	1.40E-07	3.16E-07	2.79E-08	2.07E-07	3.82E-07	3.32E-07	1.67E-08	2.17E-07	4.73E-07	3.16E-07	1.45E-08	2.09E-07	4.83E-07	7.31E-07	8.04E-07	8.04E-07	2.81E-04
3353	482400	3623500	Residential	100m grid	1.18E-07	2.38E-07	2.07E-08	1.56E-07	2.85E-07	2.47E-07	1.24E-08	1.62E-07	3.52E-07	2.36E-07	1.08E-08	1.55E-07	3.76E-07	5.44E-07	5.99E-07	5.99E-07	2.09E-04
3354	482500	3623500	Residential	100m grid	1.04E-07	1.92E-07	1.66E-08	1.26E-07	2.28E-07	1.98E-07	9.97E-09	1.30E-07	2.83E-07	1.89E-07	8.68E-09	1.25E-07	3.13E-07	4.37E-07	4.80E-07	4.80E-07	1.68E-04
3355	482600	3623500	Residential	100m grid	9.23E-08	1.61E-07	1.38E-08	1.06E-07	1.90E-07	1.65E-07	8.28E-09	1.08E-07	2.35E-07	1.57E-07	7.21E-09	1.04E-07	2.67E-07	3.63E-07	3.99E-07	3.99E-07	1.39E-04
3356	482700	3623500	Residential	100m grid	8.26E-08	1.37E-07	1.17E-08	9.04E-08	1.61E-07	1.40E-07	7.02E-09	9.14E-08	1.99E-07	1.33E-07	6.11E-09	8.78E-08	2.32E-07	3.08E-07	3.38E-07	3.38E-07	1.18E-04
3357	482800	3623500	Residential	100m grid	7.39E-08	1.18E-07	1.00E-08	7.78E-08	1.38E-07	1.20E-07	6.01E-09	7.82E-08	1.70E-07	1.14E-07	5.23E-09	7.51E-08	2.02E-07	2.63E-07	2.89E-07	2.89E-07	1.01E-04
3358	482900	3623500	Residential	100m grid	6.75E-08	1.05E-07	8.88E-09	6.92E-08	1.22E-07	1.06E-07	5.32E-09	6.93E-08	1.51E-07	1.01E-07	4.63E-09	6.65E-08	1.81E-07	2.33E-07	2.56E-07	2.56E-07	8.95E-05
3359	483000	3623500	Residential	100m grid	6.15E-08	9.32E-08	7.87E-09	6.15E-08	1.08E-07	9.38E-08	4.71E-09	6.13E-08	1.34E-07	8.94E-08	4.10E-09	5.89E-08	1.63E-07	2.06E-07	2.27E-07	2.27E-07	7.93E-05
3360	483100	3623500	Residential	100m grid	5.81E-08	8.65E-08	7.28E-09	5.70E-08	9.98E-08	8.68E-08	4.36E-09	5.67E-08	1.24E-07	8.27E-08	3.79E-09	5.45E-08	1.52E-07	1.91E-07	2.10E-07	2.10E-07	7.33E-05
3361	483200	3623500	Residential	100m grid	5.20E-08	7.58E-08	6.36E-09	5.00E-08	8.72E-08	7.58E-08	3.81E-09	4.96E-08	1.08E-07	7.22E-08	3.31E-09	4.76E-08	1.34E-07	1.67E-07	1.83E-07	1.83E-07	6.41E-05
3362	483300	3623500	Residential	100m grid	4.81E-08	6.89E-08	5.77E-09	4.55E-08	7.91E-08	6.88E-08	3.45E-09	4.50E-08	9.79E-08	6.55E-08	3.01E-09	4.32E-08	1.23E-07	1.51E-07	1.66E-07	1.66E-07	5.81E-05
3363	483400	3623500	Residential	100m grid	4.48E-08	6.32E-08	5.28E-09	4.17E-08	7.24E-08	6.29E-08	3.16E-09	4.12E-08	8.96E-08	6.00E-08	2.75E-09	3.95E-08	1.13E-07	1.39E-07	1.52E-07	1.52E-07	5.32E-05
3364	483500	3623500	Residential	100m grid	4.20E-08	5.85E-08	4.87E-09	3.86E-08	6.68E-08	5.81E-08	2.92E-09	3.80E-08	8.27E-08	5.54E-08	2.54E-09	3.65E-08	1.05E-07	1.28E-07	1.41E-07	1.41E-07	4.91E-05
3365	483600	3623500	Residential	100m grid	3.95E-08	5.42E-08	4.51E-09	3.58E-08	6.19E-08	5.38E-08	2.70E-09	3.52E-08	7.65E-08	5.12E-08	2.35E-09	3.38E-08	9.82E-08	1.18E-07	1.30E-07	1.30E-07	4.54E-05
3366	479300	3623600	Residential	100m grid	2.56E-08	2.42E-08	1.87E-09	1.61E-08	2.57E-08	2.23E-08	1.12E-09	1.46E-08	3.18E-08	2.12E-08	9.75E-10	1.40E-08	5.17E-08	4.91E-08	5.40E-08	5.40E-08	1.88E-05
3367	479400	3623600	Residential	100m grid	2.81E-08	2.66E-08	2.05E-09	1.77E-08	2.81E-08	2.44E-08	1.23E-09	1.60E-08	3.48E-08	2.33E-08	1.07E-09	1.53E-08	5.67E-08	5.38E-08	5.91E-08	5.91E-08	2.07E-05
3368	479500	3623600	Residential	100m grid	3.17E-08	2.98E-08	2.30E-09	1.99E-08	3.16E-08	2.74E-08	1.38E-09	1.79E-08	3.90E-08	2.61E-08	1.20E-09	1.72E-08	6.39E-08	6.04E-08	6.64E-08	6.64E-08	2.32E-05
3369	479600	3623600	Residential	100m grid	3.92E-08	3.65E-08	2.80E-09	2.43E-08	3.84E-08	3.34E-08	1.68E-09	2.18E-08	4.76E-08	3.18E-08	1.46E-09	2.10E-08	7.85E-08	7.35E-08	8.08E-08	8.08E-08	2.82E-05
3370	479700	3623600	Residential	100m grid	4.27E-08	4.02E-08	3.10E-09	2.68E-08	4.25E-08	3.70E-08	1.86E-09	2.42E-08	5.26E-08	3.52E-08	1.62E-09	2.32E-08	8.61E-08	8.13E-08	8.95E-08	8.95E-08	3.12E-05
3375	480200	3623600	Residential	100m grid	6.33E-08	6.68E-08	5.29E-09	4.43E-08	7.25E-08	6.30E-08	3.17E-09	4.12E-08	8.97E-08	6.00E-08	2.76E-09	3.96E-08	1.35E-07	1.39E-07	1.53E-07	1.53E-07	5.33E-05
3376	480300	3623600	Residential	100m grid	6.87E-08	7.58E-08	6.06E-09	5.03E-08	8.31E-08	7.23E-08	3.63E-09	4.73E-08	1.03E-07	6.88E-08	3.16E-09	4.54E-08	1.51E-07	1.59E-07	1.75E-07	1.75E-07	6.11E-05
3383	482100	3623600	Residential	100m grid	1.96E-07	4.55E-07	4.03E-08	2.99E-07	5.52E-07	4.80E-07	2.41E-08	3.14E-07	6.84E-07	4.57E-07	2.10E-08	3.02E-07	6.91E-07	1.06E-06	1.16E-06	1.16E-06	4.06E-04
3384	482200	3623600	Residential	100m grid	1.52E-07	3.30E-07	2.90E-08	2.17E-07	3.98E-07	3.46E-07	1.74E-08	2.26E-07	4.93E-07	3.30E-07	1.51E-08	2.17E-07	5.12E-07	7.62E-07	8.38E-07	8.38E-07	2.93E-04
3385	482300	3623600	Residential	100m grid	1.26E-07	2.48E-07	2.17E-08	1.63E-07	2.97E-07	2.58E-07	1.30E-08	1.69E-07	3.68E-07	2.46E-07	1.13E-08	1.62E-07	3.96E-07	5.68E-07	6.25E-07	6.25E-07	2.18E-04
3386	482400	3623600	Residential	100m grid	1.09E-07	1.98E-07	1.71E-08	1.30E-07	2.34E-07	2.04E-07	1.02E-08	1.33E-07	2.90E-07	1.94E-07	8.90E-09	1.28E-07	3.24E-07	4.48E-07	4.92E-07	4.92E-07	1.72E-04
3387	482500	3623600	Residential	100m grid	9.68E-08	1.63E-07	1.39E-08	1.07E-07	1.91E-07	1.66E-07	8.35E-09	1.09E-07	2.37E-07	1.58E-07	7.27E-09	1.04E-07	2.74E-07	3.66E-07	4.02E-07	4.02E-07	1.41E-04
3388	482600	3623600	Residential	100m grid	8.70E-08	1.38E-07	1.17E-08	9.07E-08	1.60E-07	1.39E-07	6.99E-09	9.10E-08	1.98E-07	1.33E-07	6.09E-09	8.74E-08	2.36E-07	3.06E-07	3.37E-07	3.37E-07	1.18E-04
3389	482700	3623600	Residential	100m grid	7.98E-08	1.20E-07	1.01E-08	7.93E-08	1.39E-07	1.21E-07	6.07E-09	7.90E-08	1.72E-07	1.15E-07	5.28E-09	7.58E-08	2.10E-07	2.66E-07	2.92E-07	2.92E-07	1.02E-04

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	*HARP Output, Exposure Scenario A* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario B* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*HARP Output, Exposure Scenario C* Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Worker Cancer Risk	*Health Risk Quantified by Receptor Type* Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3390	482800	3623600	Residential	100m grid	7.18E-08	1.04E-07	8.72E-09	6.86E-08	1.20E-07	1.04E-07	5.22E-09	6.80E-08	1.48E-07	9.90E-08	4.54E-09	6.53E-08	1.85E-07	2.29E-07	2.51E-07	2.51E-07	8.78E-05
3391	482900	3623600	Residential	100m grid	6.56E-08	9.23E-08	7.70E-09	6.09E-08	1.06E-07	9.18E-08	4.61E-09	6.00E-08	1.31E-07	8.74E-08	4.01E-09	5.76E-08	1.66E-07	2.02E-07	2.22E-07	2.22E-07	7.76E-05
3392	483000	3623600	Residential	100m grid	6.01E-08	8.28E-08	6.88E-09	5.46E-08	9.44E-08	8.21E-08	4.12E-09	5.37E-08	1.17E-07	7.82E-08	3.59E-09	5.15E-08	1.50E-07	1.81E-07	1.99E-07	1.99E-07	6.94E-05
3393	483100	3623600	Residential	100m grid	5.57E-08	7.55E-08	6.27E-09	4.99E-08	8.59E-08	7.47E-08	3.75E-09	4.89E-08	1.06E-07	7.12E-08	3.27E-09	4.69E-08	1.37E-07	1.64E-07	1.81E-07	1.81E-07	6.31E-05
3394	483200	3623600	Residential	100m grid	5.23E-08	6.99E-08	5.79E-09	4.62E-08	7.94E-08	6.90E-08	3.47E-09	4.51E-08	9.83E-08	6.58E-08	3.02E-09	4.33E-08	1.28E-07	1.52E-07	1.67E-07	1.67E-07	5.83E-05
3395	483300	3623600	Residential	100m grid	4.79E-08	6.35E-08	5.25E-09	4.20E-08	7.20E-08	6.26E-08	3.14E-09	4.09E-08	8.91E-08	5.96E-08	2.74E-09	3.93E-08	1.17E-07	1.38E-07	1.51E-07	1.51E-07	5.29E-05
3396	483400	3623600	Residential	100m grid	4.41E-08	5.79E-08	4.78E-09	3.83E-08	6.55E-08	5.70E-08	2.86E-09	3.73E-08	8.11E-08	5.43E-08	2.49E-09	3.58E-08	1.07E-07	1.25E-07	1.38E-07	1.38E-07	4.81E-05
3397	483500	3623600	Residential	100m grid	4.11E-08	5.35E-08	4.41E-09	3.54E-08	6.05E-08	5.26E-08	2.64E-09	3.44E-08	7.48E-08	5.01E-08	2.30E-09	3.30E-08	9.91E-08	1.16E-07	1.27E-07	1.27E-07	4.44E-05
3398	483600	3623600	Residential	100m grid	3.87E-08	4.99E-08	4.10E-09	3.30E-08	5.63E-08	4.89E-08	2.46E-09	3.20E-08	6.96E-08	4.66E-08	2.14E-09	3.07E-08	9.26E-08	1.08E-07	1.18E-07	1.18E-07	4.13E-05
3399	479300	3623700	Residential	100m grid	2.56E-08	2.52E-08	1.97E-09	1.68E-08	2.70E-08	2.35E-08	1.18E-09	1.53E-08	3.34E-08	2.24E-08	1.03E-09	1.47E-08	5.28E-08	5.17E-08	5.68E-08	5.68E-08	1.98E-05
3400	479400	3623700	Residential	100m grid	2.78E-08	2.74E-08	2.13E-09	1.82E-08	2.93E-08	2.54E-08	1.28E-09	1.66E-08	3.62E-08	2.42E-08	1.11E-09	1.60E-08	5.73E-08	5.60E-08	6.16E-08	6.16E-08	2.15E-05
3401	479500	3623700	Residential	100m grid	3.11E-08	3.07E-08	2.39E-09	2.04E-08	3.28E-08	2.85E-08	1.43E-09	1.87E-08	4.06E-08	2.72E-08	1.25E-09	1.79E-08	6.42E-08	6.28E-08	6.91E-08	6.91E-08	2.41E-05
3402	479600	3623700	Residential	100m grid	3.68E-08	3.74E-08	2.94E-09	2.48E-08	4.03E-08	3.50E-08	1.76E-09	2.29E-08	4.98E-08	3.33E-08	1.53E-09	2.20E-08	7.71E-08	7.70E-08	8.47E-08	8.47E-08	2.96E-05
3415	482000	3623700	Residential	100m grid	3.06E-07	5.59E-07	4.83E-08	3.68E-07	6.63E-07	5.76E-07	2.89E-08	3.77E-07	8.20E-07	5.49E-07	2.52E-08	3.62E-07	9.14E-07	1.27E-06	1.39E-06	1.39E-06	4.87E-04
3416	482100	3623700	Residential	100m grid	1.88E-07	3.44E-07	2.97E-08	2.26E-07	4.07E-07	3.54E-07	1.78E-08	2.32E-07	5.04E-07	3.37E-07	1.55E-08	2.22E-07	5.61E-07	7.79E-07	8.57E-07	8.57E-07	2.99E-04
3417	482200	3623700	Residential	100m grid	1.49E-07	2.72E-07	2.35E-08	1.79E-07	3.23E-07	2.81E-07	1.41E-08	1.83E-07	3.99E-07	2.67E-07	1.23E-08	1.76E-07	4.45E-07	6.17E-07	6.79E-07	6.79E-07	2.37E-04
3418	482300	3623700	Residential	100m grid	1.21E-07	2.15E-07	1.86E-08	1.42E-07	2.54E-07	2.21E-07	1.11E-08	1.45E-07	3.15E-07	2.11E-07	9.67E-09	1.39E-07	3.55E-07	4.87E-07	5.35E-07	5.35E-07	1.87E-04
3419	482400	3623700	Residential	100m grid	1.03E-07	1.76E-07	1.51E-08	1.16E-07	2.07E-07	1.80E-07	9.02E-09	1.17E-07	2.56E-07	1.71E-07	7.85E-09	1.13E-07	2.93E-07	3.95E-07	4.34E-07	4.34E-07	1.52E-04
3420	482500	3623700	Residential	100m grid	9.01E-08	1.46E-07	1.25E-08	9.63E-08	1.71E-07	1.48E-07	7.46E-09	9.71E-08	2.11E-07	1.41E-07	6.49E-09	9.32E-08	2.49E-07	3.27E-07	3.59E-07	3.59E-07	1.25E-04
3421	482600	3623700	Residential	100m grid	8.09E-08	1.25E-07	1.05E-08	8.21E-08	1.45E-07	1.26E-07	6.31E-09	8.21E-08	1.79E-07	1.20E-07	5.49E-09	7.89E-08	2.16E-07	2.76E-07	3.04E-07	3.04E-07	1.06E-04
3422	482700	3623700	Residential	100m grid	7.40E-08	1.08E-07	9.11E-09	7.16E-08	1.25E-07	1.09E-07	5.45E-09	7.10E-08	1.55E-07	1.03E-07	4.75E-09	6.82E-08	1.92E-07	2.39E-07	2.63E-07	2.63E-07	9.18E-05
3423	482800	3623700	Residential	100m grid	6.80E-08	9.51E-08	7.93E-09	6.28E-08	1.09E-07	9.46E-08	4.75E-09	6.18E-08	1.35E-07	9.01E-08	4.13E-09	5.94E-08	1.71E-07	2.08E-07	2.29E-07	2.29E-07	7.99E-05
3424	482900	3623700	Residential	100m grid	6.27E-08	8.45E-08	7.01E-09	5.58E-08	9.61E-08	8.35E-08	4.20E-09	5.46E-08	1.19E-07	7.96E-08	3.65E-09	5.24E-08	1.54E-07	1.84E-07	2.02E-07	2.02E-07	7.06E-05
3425	483000	3623700	Residential	100m grid	5.82E-08	7.61E-08	6.27E-09	5.03E-08	8.60E-08	7.48E-08	3.76E-09	4.89E-08	1.06E-07	7.12E-08	3.27E-09	4.70E-08	1.41E-07	1.65E-07	1.81E-07	1.81E-07	6.32E-05
3426	483100	3623700	Residential	100m grid	5.43E-08	6.93E-08	5.70E-09	4.58E-08	7.81E-08	6.79E-08	3.41E-09	4.44E-08	9.67E-08	6.47E-08	2.97E-09	4.26E-08	1.29E-07	1.49E-07	1.64E-07	1.64E-07	5.74E-05
3427	483200	3623700	Residential	100m grid	5.04E-08	6.33E-08	5.18E-09	4.19E-08	7.11E-08	6.18E-08	3.10E-09	4.04E-08	8.80E-08	5.89E-08	2.70E-09	3.88E-08	1.19E-07	1.36E-07	1.50E-07	1.50E-07	5.22E-05
3428	483300	3623700	Residential	100m grid	4.69E-08	5.82E-08	4.76E-09	3.85E-08	6.53E-08	5.68E-08	2.85E-09	3.71E-08	8.08E-08	5.41E-08	2.48E-09	3.56E-08	1.10E-07	1.25E-07	1.37E-07	1.37E-07	4.80E-05
3429	483400	3623700	Residential	100m grid	4.38E-08	5.39E-08	4.40E-09	3.57E-08	6.04E-08	5.25E-08	2.64E-09	3.43E-08	7.47E-08	5.00E-08	2.29E-09	3.30E-08	1.02E-07	1.15E-07	1.27E-07	1.27E-07	4.44E-05
3430	483500	3623700	Residential	100m grid	4.10E-08	5.01E-08	4.09E-09	3.32E-08	5.61E-08	4.87E-08	2.45E-09	3.19E-08	6.94E-08	4.64E-08	2.13E-09	3.06E-08	9.52E-08	1.07E-07	1.18E-07	1.18E-07	4.12E-05
3431	483600	3623700	Residential	100m grid	3.84E-08	4.68E-08	3.82E-09	3.10E-08	5.23E-08	4.55E-08	2.29E-09	2.97E-08	6.48E-08	4.33E-08	1.99E-09	2.86E-08	8.91E-08	1.00E-07	1.10E-07	1.10E-07	3.84E-05
3432	479300	3623800	Residential	100m grid	2.91E-08	3.03E-08	2.40E-09	2.01E-08	3.29E-08	2.86E-08	1.43E-09	1.87E-08	4.07E-08	2.72E-08	1.25E-09	1.79E-08	6.18E-08	6.29E-08	6.91E-08	6.91E-08	2.41E-05
3433	479400	3623800	Residential	100m grid	2.82E-08	2.93E-08	2.31E-09	1.94E-08	3.16E-08	2.75E-08	1.38E-09	1.80E-08	3.92E-08	2.62E-08	1.20E-09	1.73E-08	5.98E-08	6.05E-08	6.66E-08	6.66E-08	2.33E-05
3434	479500	3623800	Residential	100m grid	3.11E-08	3.33E-08	2.65E-09	2.21E-08	3.63E-08	3.16E-08	1.59E-09	2.06E-08	4.49E-08	3.01E-08	1.38E-09	1.98E-08	6.71E-08	6.95E-08	7.64E-08	7.64E-08	2.67E-05
3448	481900	3623800	Residential	100m grid	4.40E-07	7.05E-07	6.00E-08	4.65E-07	8.22E-07	7.15E-07	3.59E-08	4.67E-07	1.02E-06	6.81E-07	3.13E-08	4.49E-07	1.21E-06	1.57E-06	1.73E-06	1.73E-06	6.04E-04
3449	482000	3623800	Residential	100m grid	2.64E-07	4.09E-07	3.46E-08	2.69E-07	4.74E-07	4.12E-07	2.07E-08	2.70E-07	5.87E-07	3.93E-07	1.80E-08	2.59E-07	7.07E-07	9.07E-07	9.98E-07	9.98E-07	3.48E-04
3450	482100	3623800	Residential	100m grid	1.96E-07	3.03E-07	2.56E-08	2.00E-07	3.52E-07	3.06E-07	1.53E-08	2.00E-07	4.35E-07	2.91E-07	1.34E-08	1.92E-07	5.25E-07	6.72E-07	7.39E-07	7.39E-07	2.58E-04
3451	482200	3623800	Residential	100m grid	1.59E-07	2.48E-07	2.10E-08	1.63E-07	2.88E-07	2.50E-07	1.26E-08	1.64E-07	3.56E-07	2.38E-07	1.09E-08	1.57E-07	4.28E-07	5.51E-07	6.06E-07	6.06E-07	2.12E-04
3452	482300	3623800	Residential	100m grid	1.28E-07	2.01E-07	1.71E-08	1.33E-07	2.34E-07	2.04E-07	1.02E-08	1.33E-07	2.90E-07	1.94E-07	8.90E-09	1.28E-07	3.47E-07	4.48E-07	4.93E-07	4.93E-07	1.72E-04
3453	482400	3623800	Residential	100m grid	1.05E-07	1.65E-07	1.40E-08	1.09E-07	1.92E-07	1.67E-07	8.39E-09	1.09E-07	2.38E-07	1.59E-07	7.31E-09	1.05E-07	2.85E-07	3.68E-07	4.04E-07	4.04E-07	1.41E-04
3454	482500	3623800	Residential	100m grid	8.87E-08	1.38E-07	1.16E-08	9.07E-08	1.60E-07	1.39E-07	6.97E-09	9.08E-08	1.98E-07	1.32E-07	6.07E-09	8.72E-08	2.38E-07	3.05E-07	3.36E-07	3.36E-07	1.17E-04
3455	482600	3623800	Residential	100m grid	7.73E-08	1.17E-07	9.88E-09	7.73E-08	1.36E-07	1.18E-07	5.92E-09	7.71E-08	1.68E-07	1.12E-07	5.15E-09	7.40E-08	2.04E-07	2.59E-07	2.85E-07	2.85E-07	9.96E-05
3456	482700	3623800	Residential	100m grid	6.93E-08	1.02E-07	8.57E-09	6.73E-08	1.17E-07	1.02E-07	5.13E-09	6.68E-08	1.45E-07	9.73E-08	4.47E-09	6.41E-08	1.80E-07	2.25E-07	2.47E-07	2.47E-07	8.63E-05
3457	482800	3623800	Residential	100m grid	6.33E-08	8.97E-08	7.49E-09	5.92E-08	1.03E-07	8.93E-08	4.49E-09	5.84E-08	1.27E-07	8.51E-08	3.91E-09	5.61E-08	1.60E-07	1.97E-07	2.16E-07	2.16E-07	7.55E-05
3458	482900	3623800	Residential	100m grid	5.86E-08	7.99E-08	6.64E-09	5.28E-08	9.10E-08	7.91E-08	3.97E-09	5.17E-08	1.13E-07	7.54E-08	3.46E-09	4.97E-08	1.45E-07	1.74E-07	1.91E-07	1.91E-07	6.69E-05
3459	483000	3623800	Residential	100m grid	5.47E-08	7.19E-08	5.94E-09	4.75E-08	8.14E-08	7.08E-08	3.56E-09	4.63E-08	1.01E-07	6.74E-08	3.10E-09	4.45E-08	1.33E-07	1.56E-07	1.71E-07	1.71E-07	5.98E-05
3460	483100	3623800	Residential	100m grid	5.14E-08	6.55E-08	5.38E-09	4.33E-08	7.38E-08	6.41E-08	3.22E-09	4.19E-08	9.13E-08	6.11E-08	2.80E-09	4.03E-08	1.22E-07	1.41E-07	1.55E-07	1.55E-07	5.42E-05
3461	483200	3623800	Residential	100m grid	4.83E-08	5.99E-08	4.90E-09	3.96E-08	6.72E-08	5.84E-08	2.93E-09	3.82E-08	8.31E-08	5.56E-08	2.55E-09	3.67E-08	1.13E-07	1.29E-07	1.41E-07	1.41E-07	4.94E-05
3462	483300	3623800	Residential	100m grid	4.54E-08	5.53E-08	4.50E-09	3.66E-08	6.17E-08	5.37E-08	2.70E-09	3.51E-08	7.64E-08	5.11E-08	2.35E-09	3.37E-08	1.05E-07	1.18E-07	1.30E-07	1.30E-07	4.54E-05
3463	483400	3623800	Residential	100m grid	4.28E-08	5.13E-08	4.17E-09	3.40E-08	5.72E-08	4.97E-08	2.50E-09	3.25E-08	7.07E-08	4.73E-08	2.17E-09	3.12E-08	9.83E-08	1.09E-07	1.20E-07	1.20E-07	4.20E-05
3464	483500	3623800	Residential	100m grid	4.04E-08	4.79E-08	3.88E-09	3.17E-08	5.32E-08	4.62E-08	2.32E-09	3.02E-08	6.58E-08	4.41E-08	2.02E-09	2.90E-08	9.21E-08	1.02E-07	1.12E-07	1.12E-07	3.91E-05
3465	483600	3623800	Residential	100m grid	3.81E-08	4.48E-08	3.63E-09	2.97E-08	4.98E-08	4.33E-08	2.17E-09	2.83E-08	6.16E-08	4.12E-08	1.89E-09	2.72E-08	8.65E-08	9.52E-08	1.05E-07	1.05E-07	3.66E-05
3466	479300	3623900	Residential	100m grid	2.59E-08	2.91E-08	2.34E-09	1.93E-08	3.20E-08	2.79E-08	1.40E-09	1.82E-08	3.97E-08	2.65E-08	1.22E-09	1.75E-08	5.73E-08	6.13E-08	6.74E-08	6.74E-08	2.35E-05
3467	479400	3623900	Residential	100m grid	2.67E-08	3.10E-08	2.50E-09	2.05E-08	3.43E-08	2.98E-08	1.50E-09	1.95E-08	4.24E-08	2.84E-08	1.30E-09	1.87E-08	6.02E-08	6.56E-08	7.21E-08	7.21E-08	2.52E-05
3468	479500	3623900	Residential	100m grid	2.76E-08	3.26E-08	2.64E-09	2.16E-08	3.62E-08	3.14E-08	1.58E-09	2.06E-08	4.47E-08	2.99E-08	1.37E-09	1.97E-08	6.28E-08	6.92E-08	7.61E-08	7.61E-08	2.66E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3469	479600	3623900	Residential	100m grid	2.85E-08	3.44E-08	2.80E-09	2.28E-08	3.84E-08	3.34E-08	1.68E-09	2.18E-08	4.75E-08	3.18E-08	1.46E-09	2.10E-08	6.57E-08	7.35E-08	8.08E-08	8.08E-08	2.82E-05
3481	481800	3623900	Residential	100m grid	4.77E-07	7.59E-07	6.45E-08	5.00E-07	8.84E-07	7.69E-07	3.86E-08	5.03E-07	1.09E-06	7.32E-07	3.36E-08	4.83E-07	1.30E-06	1.69E-06	1.86E-06	1.86E-06	6.50E-04
3482	481900	3623900	Residential	100m grid	3.46E-07	4.99E-07	4.18E-08	3.29E-07	5.74E-07	4.99E-07	2.50E-08	3.26E-07	7.10E-07	4.75E-07	2.18E-08	3.13E-07	8.87E-07	1.10E-06	1.21E-06	1.21E-06	4.21E-04
3483	482000	3623900	Residential	100m grid	2.45E-07	3.48E-07	2.91E-08	2.30E-07	3.99E-07	3.47E-07	1.74E-08	2.27E-07	4.94E-07	3.31E-07	1.52E-08	2.18E-07	6.23E-07	7.64E-07	8.40E-07	8.40E-07	2.93E-04
3484	482100	3623900	Residential	100m grid	2.06E-07	2.89E-07	2.41E-08	1.91E-07	3.31E-07	2.88E-07	1.44E-08	1.88E-07	4.09E-07	2.74E-07	1.26E-08	1.81E-07	5.19E-07	6.33E-07	6.96E-07	6.96E-07	2.43E-04
3485	482200	3623900	Residential	100m grid	1.61E-07	2.25E-07	1.88E-08	1.49E-07	2.58E-07	2.24E-07	1.13E-08	1.46E-07	3.19E-07	2.13E-07	9.79E-09	1.41E-07	4.05E-07	4.93E-07	5.42E-07	5.42E-07	1.89E-04
3486	482300	3623900	Residential	100m grid	1.32E-07	1.86E-07	1.55E-08	1.23E-07	2.13E-07	1.85E-07	9.29E-09	1.21E-07	2.63E-07	1.76E-07	8.09E-09	1.16E-07	3.34E-07	4.07E-07	4.48E-07	4.48E-07	1.56E-04
3487	482400	3623900	Residential	100m grid	1.12E-07	1.60E-07	1.34E-08	1.05E-07	1.83E-07	1.59E-07	8.00E-09	1.04E-07	2.27E-07	1.52E-07	6.96E-09	9.99E-08	2.85E-07	3.50E-07	3.85E-07	3.85E-07	1.35E-04
3488	482500	3623900	Residential	100m grid	9.33E-08	1.34E-07	1.12E-08	8.83E-08	1.54E-07	1.34E-07	6.71E-09	8.73E-08	1.90E-07	1.27E-07	5.84E-09	8.39E-08	2.38E-07	2.94E-07	3.23E-07	3.23E-07	1.13E-04
3489	482600	3623900	Residential	100m grid	7.94E-08	1.14E-07	9.53E-09	7.51E-08	1.31E-07	1.14E-07	5.71E-09	7.43E-08	1.62E-07	1.08E-07	4.97E-09	7.13E-08	2.03E-07	2.50E-07	2.75E-07	2.75E-07	9.60E-05
3490	482700	3623900	Residential	100m grid	6.91E-08	9.87E-08	8.26E-09	6.52E-08	1.13E-07	9.84E-08	4.94E-09	6.44E-08	1.40E-07	9.38E-08	4.30E-09	6.18E-08	1.76E-07	2.17E-07	2.38E-07	2.38E-07	8.32E-05
3491	482800	3623900	Residential	100m grid	6.15E-08	8.70E-08	7.27E-09	5.75E-08	9.97E-08	8.67E-08	4.35E-09	5.67E-08	1.23E-07	8.26E-08	3.79E-09	5.44E-08	1.56E-07	1.91E-07	2.10E-07	2.10E-07	7.33E-05
3492	482900	3623900	Residential	100m grid	5.57E-08	7.74E-08	6.45E-09	5.11E-08	8.85E-08	7.69E-08	3.86E-09	5.03E-08	1.10E-07	7.33E-08	3.36E-09	4.83E-08	1.40E-07	1.69E-07	1.86E-07	1.86E-07	6.50E-05
3493	483000	3623900	Residential	100m grid	5.12E-08	6.95E-08	5.77E-09	4.59E-08	7.91E-08	6.88E-08	3.46E-09	4.50E-08	9.79E-08	6.55E-08	3.01E-09	4.32E-08	1.27E-07	1.51E-07	1.66E-07	1.66E-07	5.81E-05
3494	483100	3623900	Residential	100m grid	4.79E-08	6.31E-08	5.21E-09	4.17E-08	7.15E-08	6.22E-08	3.12E-09	4.06E-08	8.85E-08	5.92E-08	2.72E-09	3.90E-08	1.16E-07	1.37E-07	1.50E-07	1.50E-07	5.25E-05
3495	483200	3623900	Residential	100m grid	4.53E-08	5.80E-08	4.76E-09	3.83E-08	6.53E-08	5.68E-08	2.85E-09	3.71E-08	8.09E-08	5.41E-08	2.48E-09	3.57E-08	1.08E-07	1.25E-07	1.37E-07	1.37E-07	4.80E-05
3496	483300	3623900	Residential	100m grid	4.29E-08	5.33E-08	4.36E-09	3.53E-08	5.98E-08	5.20E-08	2.61E-09	3.40E-08	7.40E-08	4.95E-08	2.27E-09	3.27E-08	1.01E-07	1.14E-07	1.26E-07	1.26E-07	4.40E-05
3497	483400	3623900	Residential	100m grid	4.08E-08	4.95E-08	4.03E-09	3.28E-08	5.53E-08	4.80E-08	2.41E-09	3.14E-08	6.84E-08	4.58E-08	2.10E-09	3.02E-08	9.43E-08	1.06E-07	1.16E-07	1.16E-07	4.06E-05
3498	483500	3623900	Residential	100m grid	3.89E-08	4.63E-08	3.75E-09	3.07E-08	5.15E-08	4.48E-08	2.25E-09	2.93E-08	6.37E-08	4.26E-08	1.96E-09	2.81E-08	8.90E-08	9.85E-08	1.08E-07	1.08E-07	3.78E-05
3499	483600	3623900	Residential	100m grid	3.71E-08	4.34E-08	3.51E-09	2.88E-08	4.82E-08	4.19E-08	2.10E-09	2.74E-08	5.96E-08	3.99E-08	1.83E-09	2.63E-08	8.40E-08	9.21E-08	1.01E-07	1.01E-07	3.54E-05
3500	479300	3624000	Residential	100m grid	2.28E-08	2.74E-08	2.23E-09	1.81E-08	3.05E-08	2.65E-08	1.33E-09	1.74E-08	3.78E-08	2.53E-08	1.16E-09	1.67E-08	5.25E-08	5.84E-08	6.42E-08	6.42E-08	2.24E-05
3501	479400	3624000	Residential	100m grid	2.34E-08	2.87E-08	2.34E-09	1.90E-08	3.21E-08	2.79E-08	1.40E-09	1.82E-08	3.97E-08	2.66E-08	1.22E-09	1.75E-08	5.44E-08	6.13E-08	6.75E-08	6.75E-08	2.36E-05
3502	479500	3624000	Residential	100m grid	2.41E-08	3.01E-08	2.46E-09	1.99E-08	3.38E-08	2.94E-08	1.47E-09	1.92E-08	4.18E-08	2.80E-08	1.28E-09	1.84E-08	5.67E-08	6.46E-08	7.11E-08	7.11E-08	2.48E-05
3517	481800	3624000	Residential	100m grid	3.76E-07	5.86E-07	4.97E-08	3.87E-07	6.81E-07	5.92E-07	2.97E-08	3.87E-07	8.43E-07	5.64E-07	2.59E-08	3.72E-07	1.01E-06	1.30E-06	1.43E-06	1.43E-06	5.00E-04
3518	481900	3624000	Residential	100m grid	2.99E-07	4.20E-07	3.50E-08	2.77E-07	4.80E-07	4.17E-07	2.10E-08	2.73E-07	5.94E-07	3.98E-07	1.82E-08	2.62E-07	7.54E-07	9.18E-07	1.01E-06	1.01E-06	3.53E-04
3519	482000	3624000	Residential	100m grid	2.37E-07	3.21E-07	2.67E-08	2.12E-07	3.66E-07	3.18E-07	1.60E-08	2.08E-07	4.53E-07	3.03E-07	1.39E-08	2.00E-07	5.85E-07	6.99E-07	7.69E-07	7.69E-07	2.69E-04
3520	482100	3624000	Residential	100m grid	1.89E-07	2.53E-07	2.10E-08	1.67E-07	2.88E-07	2.50E-07	1.26E-08	1.63E-07	3.56E-07	2.38E-07	1.09E-08	1.57E-07	4.63E-07	5.50E-07	6.05E-07	6.05E-07	2.11E-04
3521	482200	3624000	Residential	100m grid	1.58E-07	2.11E-07	1.74E-08	1.39E-07	2.39E-07	2.08E-07	1.04E-08	1.36E-07	2.96E-07	1.98E-07	9.08E-09	1.30E-07	3.86E-07	4.57E-07	5.02E-07	5.02E-07	1.75E-04
3522	482300	3624000	Residential	100m grid	1.34E-07	1.77E-07	1.46E-08	1.17E-07	2.00E-07	1.74E-07	8.75E-09	1.14E-07	2.48E-07	1.66E-07	7.62E-09	1.09E-07	3.25E-07	3.83E-07	4.22E-07	4.22E-07	1.47E-04
3523	482400	3624000	Residential	100m grid	1.14E-07	1.52E-07	1.25E-08	1.00E-07	1.72E-07	1.49E-07	7.51E-09	9.78E-08	2.13E-07	1.42E-07	6.54E-09	9.39E-08	2.78E-07	3.29E-07	3.62E-07	3.62E-07	1.26E-04
3524	482500	3624000	Residential	100m grid	9.82E-08	1.31E-07	1.09E-08	8.68E-08	1.49E-07	1.30E-07	6.51E-09	8.48E-08	1.85E-07	1.24E-07	5.67E-09	8.14E-08	2.40E-07	2.85E-07	3.14E-07	3.14E-07	1.10E-04
3525	482600	3624000	Residential	100m grid	8.40E-08	1.13E-07	9.35E-09	7.45E-08	1.28E-07	1.11E-07	5.60E-09	7.29E-08	1.59E-07	1.06E-07	4.87E-09	7.00E-08	2.06E-07	2.45E-07	2.70E-07	2.70E-07	9.42E-05
3526	482700	3624000	Residential	100m grid	7.25E-08	9.76E-08	8.09E-09	6.45E-08	1.11E-07	9.65E-08	4.85E-09	6.31E-08	1.37E-07	9.19E-08	4.22E-09	6.06E-08	1.78E-07	2.12E-07	2.33E-07	2.33E-07	8.15E-05
3527	482800	3624000	Residential	100m grid	6.36E-08	8.60E-08	7.13E-09	5.68E-08	9.78E-08	8.50E-08	4.27E-09	5.56E-08	1.21E-07	8.09E-08	3.72E-09	5.34E-08	1.57E-07	1.87E-07	2.06E-07	2.06E-07	7.18E-05
3528	482900	3624000	Residential	100m grid	5.65E-08	7.65E-08	6.34E-09	5.05E-08	8.70E-08	7.56E-08	3.80E-09	4.95E-08	1.08E-07	7.21E-08	3.31E-09	4.75E-08	1.39E-07	1.66E-07	1.83E-07	1.83E-07	6.39E-05
3529	483000	3624000	Residential	100m grid	5.05E-08	6.82E-08	5.65E-09	4.51E-08	7.76E-08	6.74E-08	3.39E-09	4.41E-08	9.60E-08	6.42E-08	2.95E-09	4.23E-08	1.24E-07	1.48E-07	1.63E-07	1.63E-07	5.70E-05
3530	483100	3624000	Residential	100m grid	4.65E-08	6.23E-08	5.15E-09	4.11E-08	7.07E-08	6.15E-08	3.09E-09	4.02E-08	8.75E-08	5.85E-08	2.69E-09	3.86E-08	1.14E-07	1.35E-07	1.49E-07	1.49E-07	5.19E-05
3531	483200	3624000	Residential	100m grid	4.30E-08	5.67E-08	4.68E-09	3.75E-08	6.42E-08	5.58E-08	2.80E-09	3.65E-08	7.95E-08	5.32E-08	2.44E-09	3.50E-08	1.04E-07	1.23E-07	1.35E-07	1.35E-07	4.72E-05
3532	483300	3624000	Residential	100m grid	4.01E-08	5.19E-08	4.27E-09	3.43E-08	5.86E-08	5.09E-08	2.56E-09	3.33E-08	7.25E-08	4.85E-08	2.23E-09	3.20E-08	9.63E-08	1.12E-07	1.23E-07	1.23E-07	4.30E-05
3533	483400	3624000	Residential	100m grid	3.81E-08	4.81E-08	3.94E-09	3.18E-08	5.41E-08	4.70E-08	2.36E-09	3.07E-08	6.69E-08	4.48E-08	2.06E-09	2.95E-08	9.02E-08	1.03E-07	1.14E-07	1.14E-07	3.97E-05
3534	483500	3624000	Residential	100m grid	3.65E-08	4.50E-08	3.67E-09	2.97E-08	5.03E-08	4.38E-08	2.20E-09	2.86E-08	6.23E-08	4.17E-08	1.91E-09	2.75E-08	8.51E-08	9.63E-08	1.06E-07	1.06E-07	3.70E-05
3535	483600	3624000	Residential	100m grid	3.53E-08	4.25E-08	3.45E-09	2.81E-08	4.74E-08	4.12E-08	2.07E-09	2.69E-08	5.86E-08	3.92E-08	1.80E-09	2.59E-08	8.12E-08	9.06E-08	9.96E-08	9.96E-08	3.48E-05
3536	479300	3624100	Residential	100m grid	2.02E-08	2.52E-08	2.06E-09	1.67E-08	2.83E-08	2.46E-08	1.24E-09	1.61E-08	3.50E-08	2.34E-08	1.08E-09	1.55E-08	4.75E-08	5.42E-08	5.96E-08	5.96E-08	2.08E-05
3537	479400	3624100	Residential	100m grid	2.09E-08	2.62E-08	2.15E-09	1.73E-08	2.95E-08	2.56E-08	1.29E-09	1.68E-08	3.65E-08	2.44E-08	1.12E-09	1.61E-08	4.92E-08	5.64E-08	6.20E-08	6.20E-08	2.16E-05
3538	479500	3624100	Residential	100m grid	2.17E-08	2.74E-08	2.24E-09	1.81E-08	3.08E-08	2.67E-08	1.34E-09	1.75E-08	3.81E-08	2.55E-08	1.17E-09	1.68E-08	5.14E-08	5.88E-08	6.47E-08	6.47E-08	2.26E-05
3539	479600	3624100	Residential	100m grid	2.29E-08	2.86E-08	2.34E-09	1.89E-08	3.21E-08	2.79E-08	1.40E-09	1.83E-08	3.98E-08	2.66E-08	1.22E-09	1.75E-08	5.39E-08	6.15E-08	6.76E-08	6.76E-08	2.36E-05
3549	480600	3624100	Residential	100m grid	4.36E-08	6.36E-08	5.34E-09	4.20E-08	7.32E-08	6.37E-08	3.20E-09	4.16E-08	9.07E-08	6.07E-08	2.78E-09	4.00E-08	1.13E-07	1.40E-07	1.54E-07	1.54E-07	5.38E-05
3553	481700	3624100	Residential	100m grid	3.48E-07	6.07E-07	5.22E-08	4.00E-07	7.15E-07	6.22E-07	3.12E-08	4.07E-07	8.85E-07	5.92E-07	2.72E-08	3.91E-07	1.01E-06	1.37E-06	1.51E-06	1.51E-06	5.26E-04
3554	481800	3624100	Residential	100m grid	3.13E-07	4.99E-07	4.24E-08	3.29E-07	5.81E-07	5.05E-07	2.54E-08	3.30E-07	7.19E-07	4.81E-07	2.21E-08	3.17E-07	8.54E-07	1.11E-06	1.22E-06	1.22E-06	4.27E-04
3555	481900	3624100	Residential	100m grid	2.43E-07	3.46E-07	2.90E-08	2.29E-07	3.97E-07	3.45E-07	1.73E-08	2.26E-07	4.92E-07	3.29E-07	1.51E-08	2.17E-07	6.18E-07	7.60E-07	8.36E-07	8.36E-07	2.92E-04
3556	482000	3624100	Residential	100m grid	2.05E-07	2.72E-07	2.25E-08	1.80E-07	3.09E-07	2.69E-07	1.35E-08	1.76E-07	3.82E-07	2.56E-07	1.17E-08	1.69E-07	5.00E-07	5.91E-07	6.50E-07	6.50E-07	2.27E-04
3557	482100	3624100	Residential	100m grid	1.79E-07	2.31E-07	1.90E-08	1.53E-07	2.61E-07	2.27E-07	1.14E-08	1.48E-07	3.23E-07	2.16E-07	9.92E-09	1.43E-07	4.29E-07	5.00E-07	5.49E-07	5.49E-07	1.92E-04
3558	482200	3624100	Residential	100m grid	1.53E-07	1.96E-07	1.61E-08	1.30E-07	2.21E-07	1.92E-07	9.65E-09	1.26E-07	2.74E-07	1.83E-07	8.40E-09	1.21E-07	3.65E-07	4.23E-07	4.65E-07	4.65E-07	1.62E-04
3559	482300	3624100	Residential	100m grid	1.31E-07	1.68E-07	1.38E-08	1.11E-07	1.89E-07	1.65E-07	8.27E-09	1.08E-07	2.34E-07	1.57E-07	7.20E-09	1.03E-07	3.13E-07	3.62E-07	3.99E-07	3.99E-07	1.39E-04

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				HARP Output, Exposure Scenario B				HARP Output, Exposure Scenario C				Health Risk Quantified by Receptor Type				
Rec #	UTM X (m)	UTM Y (m)	Receptor Type	Receptor Description	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Resi-dential Cancer Risk Age 3TM-2	Resi-dential Cancer Risk Age 2-16	Resi-dential Cancer Risk Age 16-30	Worker Cancer Risk	Cancer Risk, Scenario A	Cancer Risk, Scenario B	Cancer Risk, Scenario C	Max Cancer Risk	Max Chronic Hazard Index
3560	482400	3624100	Residential	100m grid	1.14E-07	1.46E-07	1.20E-08	9.63E-08	1.64E-07	1.43E-07	7.16E-09	9.33E-08	2.03E-07	1.36E-07	6.24E-09	8.96E-08	2.72E-07	3.14E-07	3.45E-07	3.45E-07	1.21E-04
3561	482500	3624100	Residential	100m grid	9.94E-08	1.27E-07	1.04E-08	8.40E-08	1.43E-07	1.24E-07	6.25E-09	8.13E-08	1.77E-07	1.18E-07	5.44E-09	7.81E-08	2.37E-07	2.74E-07	3.01E-07	3.01E-07	1.05E-04
3562	482600	3624100	Residential	100m grid	8.67E-08	1.11E-07	9.12E-09	7.34E-08	1.25E-07	1.09E-07	5.46E-09	7.11E-08	1.55E-07	1.04E-07	4.75E-09	6.83E-08	2.07E-07	2.39E-07	2.63E-07	2.63E-07	9.19E-05
3563	482700	3624100	Residential	100m grid	7.59E-08	9.71E-08	7.98E-09	6.42E-08	1.09E-07	9.51E-08	4.78E-09	6.22E-08	1.35E-07	9.06E-08	4.16E-09	5.97E-08	1.81E-07	2.09E-07	2.30E-07	2.30E-07	8.04E-05
3564	482800	3624100	Residential	100m grid	6.73E-08	8.61E-08	7.07E-09	5.69E-08	9.70E-08	8.44E-08	4.24E-09	5.52E-08	1.20E-07	8.04E-08	3.69E-09	5.30E-08	1.60E-07	1.86E-07	2.04E-07	2.04E-07	7.13E-05
3565	482900	3624100	Residential	100m grid	5.89E-08	7.57E-08	6.23E-09	5.01E-08	8.54E-08	7.43E-08	3.73E-09	4.86E-08	1.06E-07	7.07E-08	3.25E-09	4.66E-08	1.41E-07	1.63E-07	1.80E-07	1.80E-07	6.28E-05
3566	483000	3624100	Residential	100m grid	5.22E-08	6.76E-08	5.56E-09	4.47E-08	7.63E-08	6.63E-08	3.33E-09	4.34E-08	9.44E-08	6.32E-08	2.90E-09	4.16E-08	1.25E-07	1.46E-07	1.60E-07	1.60E-07	5.61E-05
3567	483100	3624100	Residential	100m grid	4.69E-08	6.11E-08	5.03E-09	4.04E-08	6.90E-08	6.00E-08	3.01E-09	3.92E-08	8.54E-08	5.72E-08	2.62E-09	3.77E-08	1.13E-07	1.32E-07	1.45E-07	1.45E-07	5.07E-05
3568	483200	3624100	Residential	100m grid	4.41E-08	5.72E-08	4.71E-09	3.78E-08	6.47E-08	5.62E-08	2.82E-09	3.68E-08	8.00E-08	5.35E-08	2.46E-09	3.53E-08	1.06E-07	1.24E-07	1.36E-07	1.36E-07	4.75E-05
3569	483300	3624100	Residential	100m grid	3.95E-08	5.12E-08	4.22E-09	3.39E-08	5.79E-08	5.03E-08	2.53E-09	3.29E-08	7.16E-08	4.79E-08	2.20E-09	3.16E-08	9.49E-08	1.11E-07	1.22E-07	1.22E-07	4.25E-05
3570	483400	3624100	Residential	100m grid	3.68E-08	4.74E-08	3.90E-09	3.13E-08	5.34E-08	4.65E-08	2.33E-09	3.04E-08	6.61E-08	4.43E-08	2.03E-09	2.92E-08	8.80E-08	1.02E-07	1.12E-07	1.12E-07	3.93E-05
3571	483500	3624100	Residential	100m grid	3.47E-08	4.41E-08	3.62E-09	2.92E-08	4.97E-08	4.32E-08	2.17E-09	2.82E-08	6.15E-08	4.11E-08	1.89E-09	2.71E-08	8.24E-08	9.50E-08	1.04E-07	1.04E-07	3.65E-05
3572	483600	3624100	Residential	100m grid	3.33E-08	4.17E-08	3.41E-09	2.76E-08	4.68E-08	4.06E-08	2.04E-09	2.66E-08	5.79E-08	3.87E-08	1.78E-09	2.55E-08	7.84E-08	8.94E-08	9.84E-08	9.84E-08	3.44E-05
3573	479300	3624200	Residential	100m grid	1.85E-08	2.30E-08	1.88E-09	1.52E-08	2.58E-08	2.24E-08	1.13E-09	1.47E-08	3.19E-08	2.13E-08	9.80E-10	1.41E-08	4.34E-08	4.93E-08	5.42E-08	5.42E-08	1.89E-05
3574	479400	3624200	Residential	100m grid	1.94E-08	2.39E-08	1.95E-09	1.58E-08	2.67E-08	2.32E-08	1.17E-09	1.52E-08	3.31E-08	2.21E-08	1.02E-09	1.46E-08	4.52E-08	5.11E-08	5.62E-08	5.62E-08	1.96E-05
3575	479500	3624200	Residential	100m grid	2.05E-08	2.48E-08	2.02E-09	1.64E-08	2.77E-08	2.41E-08	1.21E-09	1.58E-08	3.43E-08	2.30E-08	1.05E-09	1.51E-08	4.73E-08	5.30E-08	5.83E-08	5.83E-08	2.04E-05
3576	479600	3624200	Residential	100m grid	2.19E-08	2.60E-08	2.11E-09	1.72E-08	2.90E-08	2.52E-08	1.26E-09	1.65E-08	3.58E-08	2.40E-08	1.10E-09	1.58E-08	5.00E-08	5.54E-08	6.09E-08	6.09E-08	2.13E-05
3594	481700	3624200	Residential	100m grid	3.05E-07	5.15E-07	4.40E-08	3.39E-07	6.04E-07	5.25E-07	2.64E-08	3.43E-07	7.47E-07	5.00E-07	2.30E-08	3.30E-07	8.64E-07	1.16E-06	1.27E-06	1.27E-06	4.44E-04
3595	481800	3624200	Residential	100m grid	2.34E-07	3.71E-07	3.15E-08	2.45E-07	4.32E-07	3.76E-07	1.89E-08	2.46E-07	5.35E-07	3.58E-07	1.64E-08	2.36E-07	6.36E-07	8.27E-07	9.09E-07	9.09E-07	3.17E-04
3596	481900	3624200	Residential	100m grid	1.92E-07	2.84E-07	2.38E-08	1.87E-07	3.27E-07	2.84E-07	1.43E-08	1.86E-07	4.05E-07	2.71E-07	1.24E-08	1.79E-07	4.99E-07	6.26E-07	6.88E-07	6.88E-07	2.40E-04
3597	482000	3624200	Residential	100m grid	1.82E-07	2.45E-07	2.03E-08	1.62E-07	2.78E-07	2.42E-07	1.21E-08	1.58E-07	3.44E-07	2.30E-07	1.06E-08	1.52E-07	4.47E-07	5.32E-07	5.85E-07	5.85E-07	2.04E-04
3598	482100	3624200	Residential	100m grid	1.67E-07	2.13E-07	1.75E-08	1.41E-07	2.40E-07	2.08E-07	1.05E-08	1.36E-07	2.97E-07	1.99E-07	9.11E-09	1.31E-07	3.98E-07	4.59E-07	5.04E-07	5.04E-07	1.76E-04
3599	482200	3624200	Residential	100m grid	1.47E-07	1.84E-07	1.51E-08	1.22E-07	2.07E-07	1.80E-07	9.03E-09	1.18E-07	2.56E-07	1.71E-07	7.86E-09	1.13E-07	3.46E-07	3.96E-07	4.35E-07	4.35E-07	1.52E-04
3600	482300	3624200	Residential	100m grid	1.28E-07	1.60E-07	1.31E-08	1.06E-07	1.80E-07	1.56E-07	7.85E-09	1.02E-07	2.23E-07	1.49E-07	6.84E-09	9.82E-08	3.01E-07	3.44E-07	3.78E-07	3.78E-07	1.32E-04
3601	482400	3624200	Residential	100m grid	1.12E-07	1.40E-07	1.15E-08	9.26E-08	1.57E-07	1.37E-07	6.86E-09	8.93E-08	1.94E-07	1.30E-07	5.97E-09	8.58E-08	2.63E-07	3.01E-07	3.31E-07	3.31E-07	1.15E-04
3602	482500	3624200	Residential	100m grid	9.88E-08	1.23E-07	1.01E-08	8.15E-08	1.38E-07	1.20E-07	6.04E-09	7.86E-08	1.71E-07	1.14E-07	5.25E-09	7.55E-08	2.32E-07	2.64E-07	2.91E-07	2.91E-07	1.02E-04
3603	482600	3624200	Residential	100m grid	8.76E-08	1.09E-07	8.90E-09	7.20E-08	1.22E-07	1.06E-07	5.33E-09	6.94E-08	1.51E-07	1.01E-07	4.64E-09	6.66E-08	2.05E-07	2.33E-07	2.57E-07	2.57E-07	8.97E-05
3604	482700	3624200	Residential	100m grid	7.77E-08	9.63E-08	7.87E-09	6.37E-08	1.08E-07	9.38E-08	4.71E-09	6.13E-08	1.34E-07	8.93E-08	4.10E-09	5.89E-08	1.82E-07	2.06E-07	2.27E-07	2.27E-07	7.93E-05
3605	482800	3624200	Residential	100m grid	7.02E-08	8.64E-08	7.05E-09	5.71E-08	9.67E-08	8.40E-08	4.22E-09	5.49E-08	1.20E-07	8.00E-08	3.67E-09	5.28E-08	1.64E-07	1.85E-07	2.03E-07	2.03E-07	7.10E-05
3606	482900	3624200	Residential	100m grid	6.22E-08	7.64E-08	6.23E-09	5.06E-08	8.55E-08	7.43E-08	3.73E-09	4.86E-08	1.06E-07	7.08E-08	3.25E-09	4.67E-08	1.45E-07	1.64E-07	1.80E-07	1.80E-07	6.28E-05
3607	483000	3624200	Residential	100m grid	5.46E-08	6.75E-08	5.51E-09	4.47E-08	7.56E-08	6.57E-08	3.30E-09	4.30E-08	9.36E-08	6.26E-08	2.87E-09	4.13E-08	1.28E-07	1.45E-07	1.59E-07	1.59E-07	5.56E-05
3608	483100	3624200	Residential	100m grid	4.90E-08	6.09E-08	4.98E-09	4.03E-08	6.83E-08	5.94E-08	2.98E-09	3.88E-08	8.46E-08	5.66E-08	2.60E-09	3.73E-08	1.15E-07	1.31E-07	1.44E-07	1.44E-07	5.02E-05
3609	483200	3624200	Residential	100m grid	4.47E-08	5.60E-08	4.58E-09	3.70E-08	6.28E-08	5.46E-08	2.74E-09	3.57E-08	7.77E-08	5.20E-08	2.39E-09	3.43E-08	1.05E-07	1.20E-07	1.32E-07	1.32E-07	4.62E-05
3610	483300	3624200	Residential	100m grid	4.10E-08	5.16E-08	4.23E-09	3.41E-08	5.80E-08	5.04E-08	2.53E-09	3.30E-08	7.17E-08	4.80E-08	2.20E-09	3.16E-08	9.69E-08	1.11E-07	1.22E-07	1.22E-07	4.26E-05
3611	483400	3624200	Residential	100m grid	3.85E-08	4.84E-08	3.97E-09	3.20E-08	5.44E-08	4.73E-08	2.38E-09	3.09E-08	6.73E-08	4.51E-08	2.07E-09	2.97E-08	9.09E-08	1.04E-07	1.14E-07	1.14E-07	4.00E-05
3612	483500	3624200	Residential	100m grid	3.49E-08	4.41E-08	3.62E-09	2.92E-08	4.96E-08	4.31E-08	2.17E-09	2.82E-08	6.14E-08	4.11E-08	1.89E-09	2.71E-08	8.27E-08	9.49E-08	1.04E-07	1.04E-07	3.65E-05
3613	483600	3624200	Residential	100m grid	3.27E-08	4.12E-08	3.38E-09	2.72E-08	4.63E-08	4.02E-08	2.02E-09	2.63E-08	5.73E-08	3.83E-08	1.76E-09	2.53E-08	7.73E-08	8.86E-08	9.74E-08	9.74E-08	3.40E-05
3614	479300	3624300	Residential	100m grid	1.76E-08	2.10E-08	1.71E-09	1.39E-08	2.34E-08	2.03E-08	1.02E-09	1.33E-08	2.90E-08	1.94E-08	8.89E-10	1.28E-08	4.03E-08	4.48E-08	4.92E-08	4.92E-08	1.72E-05
3615	479400	3624300	Residential	100m grid	1.87E-08	2.19E-08	1.77E-09	1.45E-08	2.42E-08	2.11E-08	1.06E-09	1.38E-08	3.00E-08	2.01E-08	9.21E-10	1.32E-08	4.23E-08	4.64E-08	5.10E-08	5.10E-08	1.78E-05
3616	479500	3624300	Residential	100m grid	1.99E-08	2.29E-08	1.84E-09	1.51E-08	2.53E-08	2.20E-08	1.10E-09	1.44E-08	3.13E-08	2.09E-08	9.60E-10	1.38E-08	4.46E-08	4.83E-08	5.31E-08	5.31E-08	1.86E-05
3617	479600	3624300	Residential	100m grid	2.13E-08	2.40E-08	1.93E-09	1.59E-08	2.65E-08	2.30E-08	1.16E-09	1.50E-08	3.28E-08	2.19E-08	1.01E-09	1.45E-08	4.73E-08	5.06E-08	5.57E-08	5.57E-08	1.95E-05
3618	479700	3624300	Residential	100m grid	2.29E-08	2.54E-08	2.04E-09	1.69E-08	2.79E-08	2.43E-08	1.22E-09	1.59E-08	3.46E-08	2.31E-08	1.06E-09	1.52E-08	5.04E-08	5.34E-08	5.87E-08	5.87E-08	2.05E-05
3639	481800	3624300	Residential	100m grid	1.86E-07	2.93E-07	2.49E-08	1.93E-07	3.41E-07	2.97E-07	1.49E-08	1.94E-07	4.23E-07	2.83E-07	1.30E-08	1.86E-07	5.05E-07	6.53E-07	7.18E-07	7.18E-07	2.51E-04
3640	481900	3624300	Residential	100m grid	1.63E-07	2.47E-07	2.08E-08	1.63E-07	2.86E-07	2.48E-07	1.25E-08	1.62E-07	3.53E-07	2.37E-07	1.09E-08	1.56E-07	4.31E-07	5.46E-07	6.01E-07	6.01E-07	2.10E-04
3641	482000	3624300	Residential	100m grid	1.57E-07	2.19E-07	1.82E-08	1.44E-07	2.50E-07	2.17E-07	1.09E-08	1.42E-07	3.09E-07	2.07E-07	9.49E-09	1.36E-07	3.94E-07	4.78E-07	5.26E-07	5.26E-07	1.84E-04
3642	482100	3624300	Residential	100m grid	1.53E-07	1.96E-07	1.61E-08	1.30E-07	2.21E-07	1.92E-07	9.66E-09	1.26E-07	2.74E-07	1.83E-07	8.41E-09	1.21E-07	3.65E-07	4.23E-07	4.65E-07	4.65E-07	1.63E-04
3643	482200	3624300	Residential	100m grid	1.43E-07	1.76E-07	1.44E-08	1.17E-07	1.98E-07	1.72E-07	8.63E-09	1.12E-07	2.45E-07	1.64E-07	7.51E-09	1.08E-07	3.33E-07	3.78E-07	4.16E-07	4.16E-07	1.45E-04
3644	482300	3624300	Residential	100m grid	1.24E-07	1.52E-07	1.24E-08	1.01E-07	1.71E-07	1.48E-07	7.45E-09	9.70E-08	2.11E-07	1.41E-07	6.48E-09	9.31E-08	2.89E-07	3.26E-07	3.59E-07	3.59E-07	1.25E-04
3645	482400	3624300	Residential	100m grid	1.09E-07	1.35E-07	1.10E-08	8.90E-08	1.51E-07	1.31E-07	6.58E-09	8.56E-08	1.86E-07	1.25E-07	5.73E-09	8.22E-08	2.54E-07	2.88E-07	3.17E-07	3.17E-07	1.11E-04
3646	482500	3624300	Residential	100m grid	9.68E-08	1.19E-07	9.74E-09	7.90E-08	1.34E-07	1.16E-07	5.83E-09	7.60E-08	1.65E-07	1.11E-07	5.08E-09	7.29E-08	2.26E-07	2.56E-07	2.81E-07	2.81E-07	9.82E-05
3647	482600	3624300	Residential	100m grid	8.68E-08	1.06E-07	8.68E-09	7.04E-08	1.19E-07	1.04E-07	5.20E-09	6.77E-08	1.47E-07	9.86E-08	4.53E-09	6.50E-08	2.02E-07	2.28E-07	2.51E-07	2.51E-07	8.75E-05
3648	482700	3624300	Residential	100m grid	7.87E-08	9.58E-08	7.81E-09	6.34E-08	1.07E-07	9.31E-08	4.68E-09	6.09E-08	1.33E-07	8.87E-08	4.07E-09	5.85E-08	1.82E-07	2.05E-07	2.25E-07	2.25E-07	7.87E-05
3649	482800	3624300	Residential	100m grid	7.07E-08	8.54E-08	6.94E-09	5.65E-08	9.52E-08	8.28E-08	4.16E-09	5.41E-08	1.18E-07	7.89E-08	3.62E-09	5.20E-08	1.63E-07	1.82E-07	2.00E-07	2.00E-07	7.00E-05
3650	482900	3624300	Residential	100m grid	6.96E-08	8.22E-08	6.66E-09	5.45E-08	9.14E-08	7.94E-08	3.99E-09	5.19E-08	1.13E-07	7.57E-08	3.47E-09	4.99E-08	1.59E-07	1.75E-07	1.92E-07	1.92E-07	6.71E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
3651	483000	3624300	Residential	100m grid	5.79E-08	6.89E-08	5.59E-09	4.56E-08	7.67E-08	6.67E-08	3.35E-09	4.36E-08	9.49E-08	6.35E-08	2.91E-09	4.19E-08	1.32E-07	1.47E-07	1.61E-07	1.61E-07	5.63E-05
3652	483100	3624300	Residential	100m grid	5.18E-08	6.18E-08	5.01E-09	4.09E-08	6.88E-08	5.98E-08	3.00E-09	3.91E-08	8.51E-08	5.69E-08	2.61E-09	3.75E-08	1.19E-07	1.32E-07	1.45E-07	1.45E-07	5.05E-05
3653	483200	3624300	Residential	100m grid	4.77E-08	5.70E-08	4.63E-09	3.77E-08	6.35E-08	5.52E-08	2.77E-09	3.61E-08	7.85E-08	5.26E-08	2.41E-09	3.46E-08	1.09E-07	1.21E-07	1.34E-07	1.34E-07	4.66E-05
3654	483300	3624300	Residential	100m grid	4.44E-08	5.32E-08	4.32E-09	3.52E-08	5.93E-08	5.15E-08	2.59E-09	3.37E-08	7.34E-08	4.91E-08	2.25E-09	3.24E-08	1.02E-07	1.13E-07	1.25E-07	1.25E-07	4.35E-05
3655	483400	3624300	Residential	100m grid	4.38E-08	5.27E-08	4.28E-09	3.49E-08	5.87E-08	5.10E-08	2.56E-09	3.34E-08	7.27E-08	4.86E-08	2.23E-09	3.21E-08	1.01E-07	1.12E-07	1.24E-07	1.24E-07	4.31E-05
3656	483500	3624300	Residential	100m grid	3.63E-08	4.43E-08	3.61E-09	2.93E-08	4.96E-08	4.31E-08	2.16E-09	2.82E-08	6.13E-08	4.10E-08	1.88E-09	2.70E-08	8.42E-08	9.48E-08	1.04E-07	1.04E-07	3.64E-05
3657	483600	3624300	Residential	100m grid	4.14E-08	5.08E-08	4.14E-09	3.36E-08	5.68E-08	4.94E-08	2.48E-09	3.23E-08	7.03E-08	4.71E-08	2.16E-09	3.10E-08	9.63E-08	1.09E-07	1.20E-07	1.20E-07	4.17E-05
3661	479600	3624400	Residential	100m grid	2.08E-08	2.25E-08	1.79E-09	1.49E-08	2.46E-08	2.14E-08	1.07E-09	1.40E-08	3.04E-08	2.04E-08	9.35E-10	1.34E-08	4.52E-08	4.70E-08	5.17E-08	5.17E-08	1.81E-05
3662	479700	3624400	Residential	100m grid	2.23E-08	2.39E-08	1.90E-09	1.58E-08	2.60E-08	2.26E-08	1.14E-09	1.48E-08	3.22E-08	2.15E-08	9.88E-10	1.42E-08	4.80E-08	4.98E-08	5.47E-08	5.47E-08	1.91E-05
3685	482000	3624400	Residential	100m grid	1.43E-07	2.03E-07	1.70E-08	1.34E-07	2.33E-07	2.02E-07	1.02E-08	1.32E-07	2.88E-07	1.93E-07	8.84E-09	1.27E-07	3.63E-07	4.45E-07	4.90E-07	4.90E-07	1.71E-04
3686	482100	3624400	Residential	100m grid	1.40E-07	1.84E-07	1.52E-08	1.22E-07	2.08E-07	1.81E-07	9.10E-09	1.18E-07	2.58E-07	1.73E-07	7.92E-09	1.14E-07	3.39E-07	3.99E-07	4.38E-07	4.38E-07	1.53E-04
3687	482200	3624400	Residential	100m grid	1.31E-07	1.62E-07	1.33E-08	1.07E-07	1.82E-07	1.58E-07	7.94E-09	1.03E-07	2.25E-07	1.51E-07	6.91E-09	9.93E-08	3.07E-07	3.48E-07	3.83E-07	3.83E-07	1.34E-04
3688	482300	3624400	Residential	100m grid	1.20E-07	1.45E-07	1.18E-08	9.57E-08	1.61E-07	1.40E-07	7.04E-09	9.17E-08	2.00E-07	1.34E-07	6.13E-09	8.80E-08	2.76E-07	3.09E-07	3.39E-07	3.39E-07	1.19E-04
3689	482400	3624400	Residential	100m grid	1.06E-07	1.29E-07	1.05E-08	8.53E-08	1.44E-07	1.25E-07	6.28E-09	8.18E-08	1.78E-07	1.19E-07	5.47E-09	7.85E-08	2.46E-07	2.75E-07	3.03E-07	3.03E-07	1.06E-04
3690	482500	3624400	Residential	100m grid	9.46E-08	1.16E-07	9.43E-09	7.65E-08	1.29E-07	1.12E-07	5.65E-09	7.35E-08	1.60E-07	1.07E-07	4.92E-09	7.06E-08	2.20E-07	2.47E-07	2.72E-07	2.72E-07	9.50E-05
3691	482600	3624400	Residential	100m grid	8.50E-08	1.04E-07	8.47E-09	6.88E-08	1.16E-07	1.01E-07	5.07E-09	6.60E-08	1.44E-07	9.62E-08	4.41E-09	6.34E-08	1.97E-07	2.22E-07	2.44E-07	2.44E-07	8.53E-05
3692	482700	3624400	Residential	100m grid	7.85E-08	9.53E-08	7.76E-09	6.31E-08	1.06E-07	9.25E-08	4.65E-09	6.05E-08	1.32E-07	8.82E-08	4.05E-09	5.81E-08	1.82E-07	2.04E-07	2.24E-07	2.24E-07	7.82E-05
3693	482800	3624400	Residential	100m grid	7.20E-08	8.64E-08	7.02E-09	5.72E-08	9.62E-08	8.36E-08	4.20E-09	5.47E-08	1.19E-07	7.97E-08	3.66E-09	5.25E-08	1.65E-07	1.84E-07	2.02E-07	2.02E-07	7.07E-05
3694	482900	3624400	Residential	100m grid	7.91E-08	9.29E-08	7.51E-09	6.15E-08	1.03E-07	8.96E-08	4.50E-09	5.86E-08	1.28E-07	8.53E-08	3.92E-09	5.62E-08	1.80E-07	1.97E-07	2.17E-07	2.17E-07	7.57E-05
3695	483000	3624400	Residential	100m grid	7.88E-08	9.21E-08	7.45E-09	6.10E-08	1.02E-07	8.88E-08	4.46E-09	5.81E-08	1.26E-07	8.46E-08	3.88E-09	5.58E-08	1.78E-07	1.95E-07	2.15E-07	2.15E-07	7.50E-05
3696	483100	3624400	Residential	100m grid	7.23E-08	8.40E-08	6.78E-09	5.56E-08	9.30E-08	8.09E-08	4.06E-09	5.29E-08	1.15E-07	7.70E-08	3.54E-09	5.08E-08	1.63E-07	1.78E-07	1.96E-07	1.96E-07	6.84E-05
3697	483200	3624400	Residential	100m grid	6.50E-08	7.54E-08	6.08E-09	4.99E-08	8.34E-08	7.25E-08	3.64E-09	4.74E-08	1.03E-07	6.91E-08	3.17E-09	4.55E-08	1.46E-07	1.60E-07	1.75E-07	1.75E-07	6.13E-05
3698	483300	3624400	Residential	100m grid	5.81E-08	6.76E-08	5.46E-09	4.48E-08	7.48E-08	6.51E-08	3.27E-09	4.25E-08	9.26E-08	6.20E-08	2.84E-09	4.08E-08	1.31E-07	1.43E-07	1.57E-07	1.57E-07	5.50E-05
3699	483400	3624400	Residential	100m grid	5.23E-08	6.11E-08	4.94E-09	4.05E-08	6.78E-08	5.89E-08	2.96E-09	3.85E-08	8.39E-08	5.61E-08	2.58E-09	3.70E-08	1.18E-07	1.30E-07	1.43E-07	1.43E-07	4.98E-05
3700	483500	3624400	Residential	100m grid	4.42E-08	5.18E-08	4.19E-09	3.43E-08	5.74E-08	4.99E-08	2.51E-09	3.26E-08	7.11E-08	4.75E-08	2.18E-09	3.13E-08	1.00E-07	1.10E-07	1.21E-07	1.21E-07	4.22E-05
3701	483600	3624400	Residential	100m grid	4.48E-08	5.35E-08	4.34E-09	3.54E-08	5.96E-08	5.18E-08	2.60E-09	3.39E-08	7.37E-08	4.93E-08	2.26E-09	3.25E-08	1.03E-07	1.14E-07	1.25E-07	1.25E-07	4.38E-05
3731	482200	3624500	Residential	100m grid	1.18E-07	1.49E-07	1.23E-08	9.88E-08	1.68E-07	1.46E-07	7.34E-09	9.55E-08	2.08E-07	1.39E-07	6.39E-09	9.17E-08	2.80E-07	3.21E-07	3.53E-07	3.53E-07	1.23E-04
3732	482300	3624500	Residential	100m grid	1.13E-07	1.35E-07	1.10E-08	8.93E-08	1.50E-07	1.31E-07	6.56E-09	8.54E-08	1.86E-07	1.24E-07	5.71E-09	8.20E-08	2.58E-07	2.87E-07	3.16E-07	3.16E-07	1.10E-04
3733	482400	3624500	Residential	100m grid	1.04E-07	1.23E-07	9.94E-09	8.12E-08	1.36E-07	1.18E-07	5.95E-09	7.75E-08	1.69E-07	1.13E-07	5.18E-09	7.44E-08	2.36E-07	2.61E-07	2.87E-07	2.87E-07	1.00E-04
3734	482500	3624500	Residential	100m grid	9.40E-08	1.13E-07	9.16E-09	7.46E-08	1.26E-07	1.09E-07	5.49E-09	7.14E-08	1.55E-07	1.04E-07	4.77E-09	6.86E-08	2.16E-07	2.40E-07	2.64E-07	2.64E-07	9.23E-05
3735	482600	3624500	Residential	100m grid	8.78E-08	1.06E-07	8.63E-09	7.02E-08	1.18E-07	1.03E-07	5.17E-09	6.72E-08	1.46E-07	9.80E-08	4.50E-09	6.46E-08	2.03E-07	2.26E-07	2.49E-07	2.49E-07	8.69E-05
3736	482700	3624500	Residential	100m grid	8.08E-08	9.75E-08	7.93E-09	6.46E-08	1.09E-07	9.46E-08	4.75E-09	6.18E-08	1.35E-07	9.01E-08	4.14E-09	5.94E-08	1.86E-07	2.08E-07	2.29E-07	2.29E-07	7.99E-05
3737	482800	3624500	Residential	100m grid	9.52E-08	1.15E-07	9.34E-09	7.60E-08	1.28E-07	1.11E-07	5.59E-09	7.28E-08	1.59E-07	1.06E-07	4.87E-09	6.99E-08	2.19E-07	2.45E-07	2.69E-07	2.69E-07	9.41E-05
3738	482900	3624500	Residential	100m grid	8.84E-08	1.06E-07	8.56E-09	6.98E-08	1.17E-07	1.02E-07	5.13E-09	6.68E-08	1.45E-07	9.73E-08	4.46E-09	6.41E-08	2.02E-07	2.25E-07	2.47E-07	2.47E-07	8.63E-05
3739	483000	3624500	Residential	100m grid	8.12E-08	9.56E-08	7.74E-09	6.33E-08	1.06E-07	9.23E-08	4.64E-09	6.03E-08	1.31E-07	8.79E-08	4.03E-09	5.79E-08	1.85E-07	2.03E-07	2.23E-07	2.23E-07	7.80E-05
3740	483100	3624500	Residential	100m grid	7.57E-08	8.82E-08	7.13E-09	5.84E-08	9.78E-08	8.50E-08	4.27E-09	5.56E-08	1.21E-07	8.09E-08	3.72E-09	5.34E-08	1.71E-07	1.87E-07	2.06E-07	2.06E-07	7.18E-05
3741	483200	3624500	Residential	100m grid	6.91E-08	7.97E-08	6.42E-09	5.28E-08	8.81E-08	7.66E-08	3.85E-09	5.01E-08	1.09E-07	7.29E-08	3.35E-09	4.81E-08	1.55E-07	1.68E-07	1.85E-07	1.85E-07	6.47E-05
3742	483300	3624500	Residential	100m grid	6.38E-08	7.33E-08	5.91E-09	4.86E-08	8.10E-08	7.05E-08	3.54E-09	4.61E-08	1.00E-07	6.71E-08	3.08E-09	4.42E-08	1.43E-07	1.55E-07	1.70E-07	1.70E-07	5.95E-05
3743	483400	3624500	Residential	100m grid	5.86E-08	6.75E-08	5.44E-09	4.47E-08	7.47E-08	6.49E-08	3.26E-09	4.24E-08	9.24E-08	6.18E-08	2.84E-09	4.07E-08	1.32E-07	1.43E-07	1.57E-07	1.57E-07	5.48E-05
3744	483500	3624500	Residential	100m grid	5.48E-08	6.39E-08	5.16E-09	4.23E-08	7.08E-08	6.15E-08	3.09E-09	4.02E-08	8.76E-08	5.86E-08	2.69E-09	3.86E-08	1.24E-07	1.35E-07	1.49E-07	1.49E-07	5.20E-05
3745	483600	3624500	Residential	100m grid	4.92E-08	5.74E-08	4.63E-09	3.80E-08	6.36E-08	5.53E-08	2.78E-09	3.61E-08	7.87E-08	5.26E-08	2.42E-09	3.47E-08	1.11E-07	1.22E-07	1.34E-07	1.34E-07	4.67E-05
3832	483500	3624700	Residential	100m grid	5.68E-08	6.47E-08	5.20E-09	4.28E-08	7.13E-08	6.20E-08	3.11E-09	4.05E-08	8.83E-08	5.91E-08	2.71E-09	3.89E-08	1.27E-07	1.36E-07	1.50E-07	1.50E-07	5.24E-05
3833	483600	3624700	Residential	100m grid	5.28E-08	5.99E-08	4.81E-09	3.97E-08	6.60E-08	5.74E-08	2.88E-09	3.75E-08	8.17E-08	5.47E-08	2.51E-09	3.60E-08	1.17E-07	1.26E-07	1.39E-07	1.39E-07	4.85E-05
3876	483500	3624800	Residential	100m grid	5.70E-08	6.54E-08	5.27E-09	4.33E-08	7.23E-08	6.28E-08	3.15E-09	4.11E-08	8.94E-08	5.98E-08	2.75E-09	3.94E-08	1.28E-07	1.38E-07	1.52E-07	1.52E-07	5.31E-05
3877	483600	3624800	Residential	100m grid	5.32E-08	6.02E-08	4.84E-09	3.99E-08	6.64E-08	5.77E-08	2.90E-09	3.77E-08	8.21E-08	5.50E-08	2.52E-09	3.62E-08	1.18E-07	1.27E-07	1.40E-07	1.40E-07	4.88E-05
3989	481600	3625100	Residential	100m grid	1.38E-07	1.65E-07	1.34E-08	1.09E-07	1.84E-07	1.60E-07	8.04E-09	1.05E-07	2.28E-07	1.52E-07	7.00E-09	1.01E-07	3.16E-07	3.52E-07	3.87E-07	3.87E-07	1.35E-04
3990	481700	3625100	Residential	100m grid	1.33E-07	1.62E-07	1.32E-08	1.07E-07	1.81E-07	1.57E-07	7.90E-09	1.03E-07	2.24E-07	1.50E-07	6.88E-09	9.88E-08	3.08E-07	3.46E-07	3.81E-07	3.81E-07	1.33E-04
3991	481800	3625100	Residential	100m grid	1.26E-07	1.57E-07	1.29E-08	1.04E-07	1.76E-07	1.53E-07	7.70E-09	1.00E-07	2.18E-07	1.46E-07	6.70E-09	9.62E-08	2.96E-07	3.37E-07	3.71E-07	3.71E-07	1.29E-04
3992	481900	3625100	Residential	100m grid	1.18E-07	1.50E-07	1.23E-08	9.91E-08	1.69E-07	1.47E-07	7.37E-09	9.59E-08	2.09E-07	1.40E-07	6.41E-09	9.21E-08	2.80E-07	3.23E-07	3.55E-07	3.55E-07	1.24E-04
3993	482000	3625100	Residential	100m grid	1.09E-07	1.42E-07	1.17E-08	9.38E-08	1.61E-07	1.40E-07	7.01E-09	9.12E-08	1.99E-07	1.33E-07	6.10E-09	8.76E-08	2.63E-07	3.07E-07	3.38E-07	3.38E-07	1.18E-04
3994	482100	3625100	Residential	100m grid	1.02E-07	1.35E-07	1.12E-08	8.92E-08	1.53E-07	1.33E-07	6.68E-09	8.69E-08	1.89E-07	1.27E-07	5.81E-09	8.35E-08	2.48E-07	2.93E-07	3.22E-07	3.22E-07	1.12E-04
3995	482200	3625100	Residential	100m grid	9.73E-08	1.29E-07	1.06E-08	8.50E-08	1.46E-07	1.27E-07	6.36E-09	8.28E-08	1.80E-07	1.21E-07	5.54E-09	7.95E-08	2.37E-07	2.79E-07	3.07E-07	3.07E-07	1.07E-04
3996	482300	3625100	Residential	100m grid	9.27E-08	1.22E-07	1.01E-08	8.06E-08	1.38E-07	1.20E-07	6.03E-09	7.84E-08	1.71E-07	1.14E-07	5.25E-09	7.53E-08	2.25E-07	2.64E-07	2.90E-07	2.90E-07	1.01E-04
3997	482400	3625100	Residential	100m grid	9.19E-08	1.17E-07	9.63E-09	7.75E-08	1.32E-07	1.15E-07	5.77E-09	7.51E-08	1.63E-07	1.09E-07	5.02E-09	7.21E-08	2.19E-07	2.53E-07	2.78E-07	2.78E-07	9.70E-05

Table D-A4.4-2 Health Risk Values at Modeled Sensitive Receptors, Alternative 5

					HARP Output, Exposure Scenario A				*HARP Output, Exposure Scenario B*				*HARP Output, Exposure Scenario C*				*Health Risk Quantified by Receptor Type*				
Rec #	*UTM X (m)*	*UTM Y (m)*	*Receptor Type*	*Receptor Description*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Resi-dential Cancer Risk Age 3TM-2*	*Resi-dential Cancer Risk Age 2-16*	*Resi-dential Cancer Risk Age 16-30*	*Worker Cancer Risk*	*Cancer Risk, Scenario A*	*Cancer Risk, Scenario B*	*Cancer Risk, Scenario C*	*Max Cancer Risk*	*Max Chronic Hazard Index*
3998	482500	3625100	Residential	100m grid	9.13E-08	1.13E-07	9.19E-09	7.45E-08	1.26E-07	1.10E-07	5.51E-09	7.17E-08	1.56E-07	1.04E-07	4.79E-09	6.88E-08	2.13E-07	2.41E-07	2.65E-07	2.65E-07	9.26E-05
4032	481500	3625200	Residential	100m grid	1.29E-07	1.49E-07	1.21E-08	9.89E-08	1.65E-07	1.44E-07	7.22E-09	9.40E-08	2.05E-07	1.37E-07	6.29E-09	9.03E-08	2.90E-07	3.16E-07	3.48E-07	3.48E-07	1.22E-04
4033	481600	3625200	Residential	100m grid	1.27E-07	1.51E-07	1.23E-08	1.00E-07	1.68E-07	1.46E-07	7.34E-09	9.56E-08	2.08E-07	1.39E-07	6.39E-09	9.18E-08	2.90E-07	3.22E-07	3.54E-07	3.54E-07	1.24E-04
4034	481700	3625200	Residential	100m grid	1.24E-07	1.49E-07	1.21E-08	9.89E-08	1.67E-07	1.45E-07	7.27E-09	9.47E-08	2.06E-07	1.38E-07	6.33E-09	9.09E-08	2.85E-07	3.19E-07	3.50E-07	3.50E-07	1.22E-04
4035	481800	3625200	Residential	100m grid	1.18E-07	1.45E-07	1.18E-08	9.57E-08	1.62E-07	1.41E-07	7.06E-09	9.19E-08	2.00E-07	1.34E-07	6.15E-09	8.83E-08	2.74E-07	3.09E-07	3.40E-07	3.40E-07	1.19E-04
4036	481900	3625200	Residential	100m grid	1.11E-07	1.38E-07	1.13E-08	9.13E-08	1.55E-07	1.35E-07	6.77E-09	8.81E-08	1.92E-07	1.28E-07	5.89E-09	8.46E-08	2.60E-07	2.97E-07	3.26E-07	3.26E-07	1.14E-04
4037	482000	3625200	Residential	100m grid	1.03E-07	1.31E-07	1.08E-08	8.69E-08	1.48E-07	1.29E-07	6.46E-09	8.41E-08	1.83E-07	1.23E-07	5.63E-09	8.08E-08	2.45E-07	2.83E-07	3.11E-07	3.11E-07	1.09E-04
4038	482100	3625200	Residential	100m grid	9.60E-08	1.25E-07	1.03E-08	8.25E-08	1.41E-07	1.23E-07	6.16E-09	8.02E-08	1.75E-07	1.17E-07	5.36E-09	7.70E-08	2.31E-07	2.70E-07	2.97E-07	2.97E-07	1.04E-04
4039	482200	3625200	Residential	100m grid	8.89E-08	1.18E-07	9.73E-09	7.78E-08	1.33E-07	1.16E-07	5.82E-09	7.58E-08	1.65E-07	1.10E-07	5.07E-09	7.28E-08	2.16E-07	2.55E-07	2.81E-07	2.81E-07	9.80E-05
4040	482300	3625200	Residential	100m grid	8.56E-08	1.12E-07	9.28E-09	7.43E-08	1.27E-07	1.11E-07	5.56E-09	7.24E-08	1.58E-07	1.05E-07	4.84E-09	6.95E-08	2.07E-07	2.44E-07	2.68E-07	2.68E-07	9.35E-05
4041	482400	3625200	Residential	100m grid	8.42E-08	1.08E-07	8.88E-09	7.14E-08	1.22E-07	1.06E-07	5.32E-09	6.93E-08	1.51E-07	1.01E-07	4.63E-09	6.65E-08	2.01E-07	2.33E-07	2.56E-07	2.56E-07	8.95E-05
4042	482500	3625200	Residential	100m grid	8.42E-08	1.05E-07	8.57E-09	6.93E-08	1.17E-07	1.02E-07	5.13E-09	6.68E-08	1.45E-07	9.73E-08	4.47E-09	6.41E-08	1.97E-07	2.25E-07	2.47E-07	2.47E-07	8.63E-05
4078	481700	3625300	Residential	100m grid	1.15E-07	1.38E-07	1.12E-08	9.12E-08	1.53E-07	1.33E-07	6.69E-09	8.72E-08	1.90E-07	1.27E-07	5.83E-09	8.37E-08	2.64E-07	2.93E-07	3.23E-07	3.23E-07	1.13E-04
4079	481800	3625300	Residential	100m grid	1.11E-07	1.33E-07	1.08E-08	8.81E-08	1.48E-07	1.29E-07	6.48E-09	8.44E-08	1.84E-07	1.23E-07	5.64E-09	8.10E-08	2.55E-07	2.84E-07	3.12E-07	3.12E-07	1.09E-04
4080	481900	3625300	Residential	100m grid	1.04E-07	1.26E-07	1.03E-08	8.37E-08	1.41E-07	1.23E-07	6.17E-09	8.04E-08	1.75E-07	1.17E-07	5.37E-09	7.72E-08	2.40E-07	2.70E-07	2.97E-07	2.97E-07	1.04E-04
4081	482000	3625300	Residential	100m grid	9.49E-08	1.19E-07	9.77E-09	7.89E-08	1.34E-07	1.16E-07	5.85E-09	7.62E-08	1.66E-07	1.11E-07	5.09E-09	7.31E-08	2.24E-07	2.56E-07	2.82E-07	2.82E-07	9.85E-05
4082	482100	3625300	Residential	100m grid	8.82E-08	1.14E-07	9.37E-09	7.53E-08	1.29E-07	1.12E-07	5.61E-09	7.31E-08	1.59E-07	1.06E-07	4.88E-09	7.01E-08	2.11E-07	2.46E-07	2.70E-07	2.70E-07	9.44E-05
4083	482200	3625300	Residential	100m grid	8.58E-08	1.11E-07	9.12E-09	7.33E-08	1.25E-07	1.09E-07	5.46E-09	7.11E-08	1.55E-07	1.04E-07	4.76E-09	6.83E-08	2.06E-07	2.39E-07	2.63E-07	2.63E-07	9.19E-05
4084	482300	3625300	Residential	100m grid	8.25E-08	1.06E-07	8.75E-09	7.03E-08	1.20E-07	1.04E-07	5.24E-09	6.82E-08	1.49E-07	9.94E-08	4.56E-09	6.55E-08	1.98E-07	2.30E-07	2.53E-07	2.53E-07	8.82E-05
4085	482400	3625300	Residential	100m grid	7.82E-08	1.01E-07	8.27E-09	6.65E-08	1.13E-07	9.86E-08	4.95E-09	6.45E-08	1.40E-07	9.39E-08	4.31E-09	6.19E-08	1.87E-07	2.17E-07	2.39E-07	2.39E-07	8.33E-05
4086	482500	3625300	Residential	100m grid	7.77E-08	9.74E-08	7.98E-09	6.44E-08	1.09E-07	9.51E-08	4.78E-09	6.22E-08	1.35E-07	9.06E-08	4.16E-09	5.97E-08	1.83E-07	2.09E-07	2.30E-07	2.30E-07	8.04E-05
4123	481800	3625400	Residential	100m grid	1.04E-07	1.23E-07	1.00E-08	8.17E-08	1.37E-07	1.19E-07	5.99E-09	7.80E-08	1.70E-07	1.14E-07	5.22E-09	7.49E-08	2.37E-07	2.63E-07	2.89E-07	2.89E-07	1.01E-04
4124	481900	3625400	Residential	100m grid	9.83E-08	1.18E-07	9.62E-09	7.83E-08	1.32E-07	1.15E-07	5.76E-09	7.50E-08	1.63E-07	1.09E-07	5.01E-09	7.20E-08	2.26E-07	2.52E-07	2.78E-07	2.78E-07	9.69E-05
4125	482000	3625400	Residential	100m grid	9.06E-08	1.12E-07	9.11E-09	7.38E-08	1.25E-07	1.09E-07	5.45E-09	7.10E-08	1.55E-07	1.03E-07	4.75E-09	6.82E-08	2.11E-07	2.39E-07	2.63E-07	2.63E-07	9.18E-05
4126	482100	3625400	Residential	100m grid	8.26E-08	1.05E-07	8.58E-09	6.92E-08	1.18E-07	1.02E-07	5.14E-09	6.69E-08	1.46E-07	9.75E-08	4.48E-09	6.43E-08	1.96E-07	2.25E-07	2.48E-07	2.48E-07	8.65E-05
4127	482200	3625400	Residential	100m grid	7.69E-08	9.93E-08	8.17E-09	6.56E-08	1.12E-07	9.74E-08	4.89E-09	6.37E-08	1.39E-07	9.28E-08	4.26E-09	6.12E-08	1.84E-07	2.14E-07	2.36E-07	2.36E-07	8.23E-05
4128	482300	3625400	Residential	100m grid	7.39E-08	9.59E-08	7.90E-09	6.34E-08	1.08E-07	9.42E-08	4.73E-09	6.16E-08	1.34E-07	8.97E-08	4.12E-09	5.91E-08	1.78E-07	2.07E-07	2.28E-07	2.28E-07	7.96E-05
4129	482400	3625400	Residential	100m grid	7.08E-08	9.12E-08	7.50E-09	6.03E-08	1.03E-07	8.94E-08	4.49E-09	5.85E-08	1.27E-07	8.52E-08	3.91E-09	5.61E-08	1.70E-07	1.97E-07	2.16E-07	2.16E-07	7.56E-05
4130	482500	3625400	Residential	100m grid	7.11E-08	8.97E-08	7.35E-09	5.93E-08	1.01E-07	8.77E-08	4.40E-09	5.73E-08	1.25E-07	8.35E-08	3.83E-09	5.51E-08	1.68E-07	1.93E-07	2.12E-07	2.12E-07	7.41E-05
4131	482600	3625400	Residential	100m grid	7.12E-08	8.75E-08	7.14E-09	5.79E-08	9.79E-08	8.51E-08	4.28E-09	5.57E-08	1.21E-07	8.11E-08	3.72E-09	5.34E-08	1.66E-07	1.87E-07	2.06E-07	2.06E-07	7.19E-05
4132	482700	3625400	Residential	100m grid	7.18E-08	8.58E-08	6.96E-09	5.68E-08	9.55E-08	8.30E-08	4.17E-09	5.43E-08	1.18E-07	7.91E-08	3.63E-09	5.21E-08	1.64E-07	1.83E-07	2.01E-07	2.01E-07	7.01E-05
4133	482800	3625400	Residential	100m grid	7.15E-08	8.33E-08	6.72E-09	5.51E-08	9.22E-08	8.02E-08	4.03E-09	5.24E-08	1.14E-07	7.64E-08	3.51E-09	5.03E-08	1.61E-07	1.76E-07	1.94E-07	1.94E-07	6.78E-05
4134	482900	3625400	Residential	100m grid	7.05E-08	8.03E-08	6.46E-09	5.32E-08	8.86E-08	7.70E-08	3.87E-09	5.04E-08	1.10E-07	7.34E-08	3.37E-09	4.84E-08	1.57E-07	1.69E-07	1.86E-07	1.86E-07	6.51E-05
4135	483000	3625400	Residential	100m grid	6.85E-08	7.65E-08	6.13E-09	5.07E-08	8.41E-08	7.31E-08	3.67E-09	4.78E-08	1.04E-07	6.96E-08	3.20E-09	4.59E-08	1.51E-07	1.61E-07	1.77E-07	1.77E-07	6.18E-05
4136	483100	3625400	Residential	100m grid	6.60E-08	7.33E-08	5.86E-09	4.86E-08	8.04E-08	6.99E-08	3.51E-09	4.57E-08	9.95E-08	6.66E-08	3.06E-09	4.39E-08	1.45E-07	1.54E-07	1.69E-07	1.69E-07	5.91E-05
4137	483200	3625400	Residential	100m grid	6.27E-08	6.99E-08	5.60E-09	4.64E-08	7.68E-08	6.68E-08	3.35E-09	4.37E-08	9.51E-08	6.36E-08	2.92E-09	4.19E-08	1.38E-07	1.47E-07	1.62E-07	1.62E-07	5.64E-05
4138	483300	3625400	Residential	100m grid	5.86E-08	6.62E-08	5.32E-09	4.39E-08	7.30E-08	6.34E-08	3.19E-09	4.15E-08	9.03E-08	6.04E-08	2.77E-09	3.98E-08	1.30E-07	1.40E-07	1.53E-07	1.53E-07	5.36E-05

Legend : Rec = receptor; UTM = universe transverse mercator coordinates; m = meter; HARP = hot spots analysis & reporting program; 3TM = third trimester before birth.

Notes : (1) Unless otherwise noted, all sensitive receptors were conservatively modeled with 30-year residential exposure assumptions (the same as residential receptors).

(2) Infant exposure at the birth center would be brief, so assume 25-year worker exposure conditions.

(3) Cancer risk at Veteran's Village assumes continuous exposure during the third trimester before birth and the first two years after birth.

Attachment 4.5

Cancer Burden Calculations

(CEQA Only)

List of Tables

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Table D-A4.5-1 Cancer Burden Calculations, Alternative 4

Rec #	Census Tract	Census Block	UTM X (m)	UTM Y (m)	Population [1]	HARP Output, Exposure Scenario A			HARP Output, Exposure Scenario B			HARP Output, Exposure Scenario C			Cancer Burden Calculation	
						Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Max Cancer Risk [2]	Cancer Burden [3]
1	100	2002	482056	3624262	31	1.63E-07	2.62E-07	2.27E-08	3.04E-07	2.68E-07	1.36E-08	3.83E-07	2.55E-07	1.18E-08	6.50E-07	2.02E-05
2	100	2008	482182	3623960	250	1.66E-07	2.76E-07	2.39E-08	3.21E-07	2.83E-07	1.43E-08	4.05E-07	2.69E-07	1.25E-08	6.86E-07	1.72E-04
3	100	2012	482060	3624169	40	1.79E-07	2.84E-07	2.44E-08	3.27E-07	2.89E-07	1.46E-08	4.13E-07	2.75E-07	1.27E-08	7.01E-07	2.80E-05
4	100	2015	482293	3624015	33	1.35E-07	2.18E-07	1.88E-08	2.52E-07	2.22E-07	1.13E-08	3.18E-07	2.12E-07	9.80E-09	5.40E-07	1.78E-05
5	100	2016	482256	3623930	13	1.44E-07	2.43E-07	2.11E-08	2.83E-07	2.49E-07	1.26E-08	3.57E-07	2.38E-07	1.10E-08	6.05E-07	7.87E-06
6	100	2017	481822	3624096	41	2.98E-07	5.68E-07	5.00E-08	6.70E-07	5.91E-07	2.99E-08	8.46E-07	5.63E-07	2.61E-08	1.43E-06	5.88E-05
7	100	2022	482137	3623754	1	1.77E-07	3.63E-07	3.22E-08	4.31E-07	3.80E-07	1.93E-08	5.44E-07	3.62E-07	1.68E-08	9.23E-07	9.23E-07
8	100	2023	482281	3623597	83	1.30E-07	3.26E-07	2.95E-08	3.95E-07	3.49E-07	1.77E-08	4.99E-07	3.32E-07	1.54E-08	8.47E-07	7.03E-05
9	100	2024	482197	3623702	28	1.51E-07	3.39E-07	3.04E-08	4.07E-07	3.59E-07	1.82E-08	5.13E-07	3.42E-07	1.58E-08	8.71E-07	2.44E-05
10	100	2025	482051	3623682	0	2.22E-07	5.31E-07	4.78E-08	6.41E-07	5.65E-07	2.86E-08	8.09E-07	5.38E-07	2.49E-08	1.37E-06	0.00E+00
11	100	2026	481889	3623880	40	3.90E-07	7.09E-07	6.21E-08	8.32E-07	7.34E-07	3.72E-08	1.05E-06	6.99E-07	3.24E-08	1.78E-06	7.13E-05
12	100	2027	482403	3623646	25	1.05E-07	2.29E-07	2.04E-08	2.74E-07	2.42E-07	1.22E-08	3.46E-07	2.30E-07	1.06E-08	5.86E-07	1.47E-05
13	100	2028	482362	3623741	9	1.09E-07	2.25E-07	2.00E-08	2.68E-07	2.37E-07	1.20E-08	3.39E-07	2.26E-07	1.04E-08	5.75E-07	5.17E-06
14	100	2029	482328	3623700	20	1.15E-07	2.51E-07	2.24E-08	3.00E-07	2.65E-07	1.34E-08	3.79E-07	2.52E-07	1.17E-08	6.43E-07	1.29E-05
15	100	2032	482403	3623443	52	1.23E-07	3.40E-07	3.10E-08	4.15E-07	3.66E-07	1.85E-08	5.24E-07	3.49E-07	1.61E-08	8.88E-07	4.62E-05
16	100	2033	482456	3623565	36	1.05E-07	2.31E-07	2.06E-08	2.76E-07	2.44E-07	1.24E-08	3.49E-07	2.32E-07	1.07E-08	5.92E-07	2.13E-05
17	100	2035	482590	3623410	109	1.00E-07	2.52E-07	2.28E-08	3.06E-07	2.70E-07	1.37E-08	3.86E-07	2.57E-07	1.19E-08	6.55E-07	7.14E-05
18	100	2036	482703	3623366	16	8.90E-08	2.23E-07	2.02E-08	2.70E-07	2.38E-07	1.21E-08	3.41E-07	2.27E-07	1.05E-08	5.79E-07	9.26E-06
19	100	2037	482742	3623425	11	8.14E-08	1.83E-07	1.64E-08	2.19E-07	1.93E-07	9.80E-09	2.77E-07	1.84E-07	8.53E-09	4.69E-07	5.16E-06
20	100	2038	482661	3623304	21	1.01E-07	2.81E-07	2.56E-08	3.43E-07	3.03E-07	1.54E-08	4.34E-07	2.89E-07	1.34E-08	7.36E-07	1.54E-05
21	100	2039	482535	3623556	24	9.61E-08	2.02E-07	1.79E-08	2.40E-07	2.12E-07	1.07E-08	3.03E-07	2.02E-07	9.35E-09	5.15E-07	1.24E-05
22	100	2044	482260	3623408	43	1.62E-07	5.54E-07	5.12E-08	6.85E-07	6.05E-07	3.06E-08	8.65E-07	5.76E-07	2.67E-08	1.47E-06	6.31E-05
23	100	2045	482277	3623322	16	1.76E-07	6.51E-07	6.04E-08	8.09E-07	7.14E-07	3.62E-08	1.02E-06	6.80E-07	3.15E-08	1.73E-06	2.77E-05
24	100	2046	482551	3623175	46	1.71E-07	5.18E-07	4.75E-08	6.36E-07	5.62E-07	2.85E-08	8.04E-07	5.35E-07	2.48E-08	1.36E-06	6.27E-05
25	100	2047	482581	3623197	9	1.45E-07	4.41E-07	4.04E-08	5.41E-07	4.78E-07	2.42E-08	6.84E-07	4.55E-07	2.11E-08	1.16E-06	1.04E-05
26	100	2048	482701	3623181	20	1.28E-07	3.63E-07	3.31E-08	4.44E-07	3.92E-07	1.98E-08	5.60E-07	3.73E-07	1.73E-08	9.50E-07	1.90E-05
27	100	2049	482768	3623254	41	9.98E-08	2.70E-07	2.46E-08	3.29E-07	2.90E-07	1.47E-08	4.16E-07	2.77E-07	1.28E-08	7.05E-07	2.89E-05
28	202	1004	483233	3623068	59	8.90E-08	2.00E-07	1.80E-08	2.40E-07	2.12E-07	1.08E-08	3.04E-07	2.02E-07	9.36E-09	5.15E-07	3.04E-05
29	202	1005	483198	3622963	65	1.16E-07	2.65E-07	2.38E-08	3.19E-07	2.81E-07	1.43E-08	4.03E-07	2.68E-07	1.24E-08	6.83E-07	4.44E-05
30	202	1006	483091	3622809	10	2.28E-07	4.94E-07	4.41E-08	5.90E-07	5.21E-07	2.64E-08	7.45E-07	4.96E-07	2.30E-08	1.26E-06	1.26E-05
31	202	1007	483130	3622870	40	1.69E-07	3.86E-07	3.47E-08	4.64E-07	4.10E-07	2.08E-08	5.86E-07	3.90E-07	1.81E-08	9.95E-07	3.98E-05
32	202	1008	483274	3622874	381	1.23E-07	2.76E-07	2.48E-08	3.32E-07	2.93E-07	1.48E-08	4.19E-07	2.79E-07	1.29E-08	7.10E-07	2.71E-04
33	202	1009	483386	3622730	79	1.48E-07	3.11E-07	2.76E-08	3.70E-07	3.27E-07	1.65E-08	4.67E-07	3.11E-07	1.44E-08	7.93E-07	6.26E-05
34	202	1010	483571	3622793	42	9.66E-08	2.08E-07	1.86E-08	2.49E-07	2.20E-07	1.11E-08	3.15E-07	2.09E-07	9.70E-09	5.34E-07	2.24E-05
35	202	1011	483299	3622674	50	1.98E-07	3.78E-07	3.33E-08	4.46E-07	3.94E-07	2.00E-08	5.64E-07	3.75E-07	1.74E-08	9.56E-07	4.78E-05
36	202	1012	483462	3622944	53	8.79E-08	1.86E-07	1.66E-08	2.22E-07	1.96E-07	9.91E-09	2.80E-07	1.86E-07	8.62E-09	4.75E-07	2.52E-05
37	202	1013	483399	3622583	63	2.41E-07	4.14E-07	3.61E-08	4.83E-07	4.26E-07	2.16E-08	6.10E-07	4.06E-07	1.88E-08	1.03E-06	6.52E-05
38	202	1014	483282	3622598	67	2.55E-07	4.26E-07	3.70E-08	4.95E-07	4.37E-07	2.21E-08	6.25E-07	4.16E-07	1.93E-08	1.06E-06	7.11E-05
39	202	1015	483165	3622720	30	2.67E-07	5.19E-07	4.58E-08	6.14E-07	5.42E-07	2.74E-08	7.75E-07	5.16E-07	2.39E-08	1.31E-06	3.94E-05
40	202	1016	483041	3622769	0	2.95E-07	5.91E-07	5.24E-08	7.02E-07	6.19E-07	3.14E-08	8.86E-07	5.90E-07	2.73E-08	1.50E-06	0.00E+00
41	202	1017	483049	3622710	0	3.23E-07	5.84E-07	5.12E-08	6.85E-07	6.05E-07	3.06E-08	8.65E-07	5.76E-07	2.67E-08	1.47E-06	0.00E+00
42	202	1018	483181	3622571	0	3.52E-07	5.36E-07	4.60E-08	6.16E-07	5.43E-07	2.75E-08	7.77E-07	5.17E-07	2.40E-08	1.32E-06	0.00E+00
43	202	2005	483124	3623066	125	1.19E-07	2.83E-07	2.55E-08	3.41E-07	3.01E-07	1.52E-08	4.30E-07	2.86E-07	1.33E-08	7.30E-07	9.13E-05
44	202	2006	483049	3623116	31	9.85E-08	2.38E-07	2.15E-08	2.87E-07	2.54E-07	1.28E-08	3.63E-07	2.41E-07	1.12E-08	6.15E-07	1.91E-05
45	202	2007	483094	3623179	42	8.15E-08	1.93E-07	1.74E-08	2.33E-07	2.06E-07	1.04E-08	2.94E-07	1.96E-07	9.07E-09	4.99E-07	2.10E-05
46	202	2008	482960	3622994	45	1.50E-07	3.65E-07	3.30E-08	4.42E-07	3.90E-07	1.97E-08	5.58E-07	3.71E-07	1.72E-08	9.46E-07	4.26E-05
47	202	2009	483004	3623055	53	1.21E-07	2.95E-07	2.66E-08	3.56E-07	3.14E-07	1.59E-08	4.50E-07	2.99E-07	1.39E-08	7.63E-07	4.04E-05
48	6100	1001	483577	3622442	36	1.95E-07	2.97E-07	2.54E-08	3.41E-07	3.01E-07	1.52E-08	4.30E-07	2.86E-07	1.33E-08	7.30E-07	2.63E-05
49	6100	1008	483476	3622296	75	2.97E-07	3.78E-07	3.15E-08	4.22E-07	3.73E-07	1.89E-08	5.33E-07	3.55E-07	1.64E-08	9.04E-07	6.78E-05
50	6100	1009	483372	3622435	25	3.16E-07	4.38E-07	3.70E-08	4.95E-07	4.37E-07	2.22E-08	6.26E-07	4.16E-07	1.93E-08	1.06E-06	2.65E-05

Table D-A4.5-1 Cancer Burden Calculations, Alternative 4

						HARP Output, Exposure Scenario A			*HARP Output, Exposure Scenario B*			*HARP Output, Exposure Scenario C*			*Cancer Burden Calculation*	
Rec #	*Census Tract*	*Census Block*	*UTM X (m)*	*UTM Y (m)*	*Population [(1)]*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Max Cancer Risk [(2)]*	*Cancer Burden [(3)]*
51	6100	1010	483441	3622485	41	2.49E-07	3.77E-07	3.23E-08	4.33E-07	3.82E-07	1.94E-08	5.47E-07	3.64E-07	1.68E-08	9.27E-07	3.80E-05
52	6100	1011	483507	3622534	33	1.89E-07	3.17E-07	2.76E-08	3.69E-07	3.26E-07	1.65E-08	4.66E-07	3.10E-07	1.44E-08	7.91E-07	2.61E-05
53	6100	1013	483510	3622393	36	2.30E-07	3.22E-07	2.72E-08	3.65E-07	3.22E-07	1.63E-08	4.60E-07	3.06E-07	1.42E-08	7.81E-07	2.81E-05
54	6100	1014	483576	3622303	35	2.37E-07	3.13E-07	2.62E-08	3.51E-07	3.10E-07	1.57E-08	4.44E-07	2.95E-07	1.37E-08	7.53E-07	2.63E-05
55	6100	1015	483390	3622310	0	3.27E-07	4.10E-07	3.41E-08	4.56E-07	4.03E-07	2.04E-08	5.76E-07	3.83E-07	1.77E-08	9.77E-07	0.00E+00
56	6100	2000	483366	3622293	0	3.44E-07	4.24E-07	3.52E-08	4.71E-07	4.16E-07	2.11E-08	5.95E-07	3.96E-07	1.83E-08	1.01E-06	0.00E+00
57	6100	2001	483350	3622275	0	3.64E-07	4.44E-07	3.68E-08	4.92E-07	4.35E-07	2.20E-08	6.22E-07	4.14E-07	1.92E-08	1.05E-06	0.00E+00
58	6100	2002	483304	3622246	0	3.92E-07	4.73E-07	3.90E-08	5.22E-07	4.61E-07	2.33E-08	6.59E-07	4.39E-07	2.03E-08	1.12E-06	0.00E+00
59	6100	2003	483249	3622220	0	3.97E-07	4.79E-07	3.95E-08	5.29E-07	4.67E-07	2.37E-08	6.68E-07	4.45E-07	2.06E-08	1.13E-06	0.00E+00
60	6100	2004	483174	3622265	0	4.24E-07	5.13E-07	4.23E-08	5.67E-07	5.00E-07	2.53E-08	7.16E-07	4.76E-07	2.21E-08	1.21E-06	0.00E+00
61	6100	2005	483159	3622235	0	4.21E-07	5.01E-07	4.13E-08	5.53E-07	4.88E-07	2.47E-08	6.98E-07	4.64E-07	2.15E-08	1.18E-06	0.00E+00
62	6100	2006	483475	3621869	0	2.87E-07	3.33E-07	2.73E-08	3.65E-07	3.22E-07	1.63E-08	4.61E-07	3.07E-07	1.42E-08	7.82E-07	0.00E+00
63	6100	2007	483542	3621915	0	2.83E-07	3.28E-07	2.69E-08	3.60E-07	3.17E-07	1.61E-08	4.54E-07	3.02E-07	1.40E-08	7.70E-07	0.00E+00
64	6100	2008	483297	3622100	0	3.61E-07	4.24E-07	3.48E-08	4.66E-07	4.12E-07	2.08E-08	5.89E-07	3.92E-07	1.81E-08	9.99E-07	0.00E+00
65	6100	2009	483236	3622132	0	3.79E-07	4.44E-07	3.64E-08	4.88E-07	4.30E-07	2.18E-08	6.16E-07	4.10E-07	1.90E-08	1.04E-06	0.00E+00
66	6100	2010	483519	3622047	0	2.99E-07	3.48E-07	2.85E-08	3.82E-07	3.37E-07	1.71E-08	4.82E-07	3.21E-07	1.49E-08	8.18E-07	0.00E+00
67	6100	2011	483552	3622045	0	2.84E-07	3.30E-07	2.71E-08	3.63E-07	3.20E-07	1.62E-08	4.58E-07	3.05E-07	1.41E-08	7.77E-07	0.00E+00
68	6100	2012	483596	3622022	0	2.74E-07	3.19E-07	2.61E-08	3.50E-07	3.09E-07	1.56E-08	4.42E-07	2.94E-07	1.36E-08	7.50E-07	0.00E+00
69	6100	2017	483457	3622053	0	3.24E-07	3.77E-07	3.09E-08	4.14E-07	3.65E-07	1.85E-08	5.22E-07	3.47E-07	1.61E-08	8.86E-07	0.00E+00
70	6200	1000	482721	3622500	1	6.62E-07	7.95E-07	6.56E-08	8.78E-07	7.75E-07	3.93E-08	1.11E-06	7.38E-07	3.42E-08	1.88E-06	1.88E-06
71	6200	1002	482158	3621999	0	3.42E-07	3.30E-07	2.60E-08	3.48E-07	3.07E-07	1.55E-08	4.39E-07	2.92E-07	1.35E-08	7.45E-07	0.00E+00
72	6200	1004	482468	3622371	0	6.65E-07	6.66E-07	5.29E-08	7.08E-07	6.25E-07	3.16E-08	8.94E-07	5.95E-07	2.75E-08	1.52E-06	0.00E+00
73	6200	1011	482584	3622344	0	6.14E-07	6.40E-07	5.13E-08	6.87E-07	6.06E-07	3.07E-08	8.67E-07	5.77E-07	2.67E-08	1.47E-06	0.00E+00
74	6200	1038	482157	3622154	0	4.45E-07	4.15E-07	3.24E-08	4.34E-07	3.83E-07	1.94E-08	5.48E-07	3.65E-07	1.69E-08	9.30E-07	0.00E+00
75	6300	1000	481507	3623078	0	1.35E-05	4.35E-06	1.78E-07	2.38E-06	2.10E-06	1.06E-07	3.00E-06	2.00E-06	9.25E-08	1.80E-05	0.00E+00
76	6300	1001	481406	3622971	0	4.99E-06	1.87E-06	9.10E-08	1.22E-06	1.08E-06	5.45E-08	1.54E-06	1.02E-06	4.74E-08	6.94E-06	0.00E+00
77	6300	1002	481701	3623000	0	5.12E-06	3.02E-06	2.01E-07	2.69E-06	2.37E-06	1.20E-07	3.40E-06	2.26E-06	1.05E-07	8.33E-06	0.00E+00
78	6300	1003	481260	3622930	0	1.70E-06	8.81E-07	5.50E-08	7.36E-07	6.50E-07	3.29E-08	9.30E-07	6.19E-07	2.86E-08	2.63E-06	0.00E+00
79	6300	1004	481523	3623017	0	9.01E-06	3.14E-06	1.42E-07	1.90E-06	1.68E-06	8.49E-08	2.40E-06	1.60E-06	7.39E-08	1.23E-05	0.00E+00
80	6300	1005	481213	3622813	0	7.92E-07	5.08E-07	3.51E-08	4.70E-07	4.15E-07	2.10E-08	5.93E-07	3.95E-07	1.83E-08	1.33E-06	0.00E+00
81	6300	1006	481394	3622895	0	2.57E-06	1.16E-06	6.64E-08	8.90E-07	7.85E-07	3.98E-08	1.12E-06	7.48E-07	3.46E-08	3.79E-06	0.00E+00
82	6300	1007	481499	3622882	0	3.07E-06	1.40E-06	8.01E-08	1.07E-06	9.47E-07	4.80E-08	1.36E-06	9.02E-07	4.18E-08	4.55E-06	0.00E+00
83	6300	1008	481517	3622956	0	5.55E-06	2.16E-06	1.09E-07	1.46E-06	1.29E-06	6.54E-08	1.85E-06	1.23E-06	5.69E-08	7.82E-06	0.00E+00
84	6300	1009	481662	3622934	92	4.53E-06	2.24E-06	1.36E-07	1.82E-06	1.61E-06	8.15E-08	2.30E-06	1.53E-06	7.09E-08	6.91E-06	6.36E-04
85	6300	1010	481719	3622780	0	2.17E-06	1.32E-06	8.89E-08	1.19E-06	1.05E-06	5.32E-08	1.50E-06	1.00E-06	4.63E-08	3.57E-06	0.00E+00
86	6300	1011	481816	3622863	0	2.87E-06	1.99E-06	1.42E-07	1.90E-06	1.67E-06	8.47E-08	2.39E-06	1.59E-06	7.37E-08	5.00E-06	0.00E+00
87	6300	1012	481962	3622737	0	1.75E-06	1.41E-06	1.06E-07	1.42E-06	1.25E-06	6.34E-08	1.79E-06	1.19E-06	5.52E-08	3.27E-06	0.00E+00
88	6300	1013	481897	3622779	0	2.06E-06	1.56E-06	1.15E-07	1.53E-06	1.35E-06	6.86E-08	1.94E-06	1.29E-06	5.97E-08	3.73E-06	0.00E+00
89	6300	1014	482334	3622621	0	1.04E-06	1.10E-06	8.89E-08	1.19E-06	1.05E-06	5.32E-08	1.50E-06	1.00E-06	4.63E-08	2.55E-06	0.00E+00
90	6300	1015	482065	3622641	0	1.30E-06	1.11E-06	8.52E-08	1.14E-06	1.01E-06	5.10E-08	1.44E-06	9.58E-07	4.44E-08	2.50E-06	0.00E+00
91	6300	1016	482091	3622513	0	9.49E-07	8.15E-07	6.22E-08	8.33E-07	7.35E-07	3.72E-08	1.05E-06	7.00E-07	3.24E-08	1.83E-06	0.00E+00
92	6300	1017	482026	3622709	0	1.56E-06	1.33E-06	1.02E-07	1.36E-06	1.20E-06	6.09E-08	1.72E-06	1.15E-06	5.30E-08	2.99E-06	0.00E+00
93	6300	1018	481826	3622892	0	3.04E-06	2.24E-06	1.63E-07	2.18E-06	1.93E-06	9.76E-08	2.76E-06	1.83E-06	8.49E-08	5.44E-06	0.00E+00
94	6300	1019	480897	3622734	0	1.68E-07	1.73E-07	1.38E-08	1.85E-07	1.63E-07	8.27E-09	2.34E-07	1.55E-07	7.20E-09	3.96E-07	0.00E+00
95	6300	1023	481006	3622615	0	2.27E-07	1.99E-07	1.53E-08	2.05E-07	1.81E-07	9.16E-09	2.59E-07	1.72E-07	7.98E-09	4.41E-07	0.00E+00
96	6300	1024	481018	3622705	0	2.61E-07	2.31E-07	1.78E-08	2.38E-07	2.10E-07	1.06E-08	3.01E-07	2.00E-07	9.26E-09	5.10E-07	0.00E+00
97	6300	1025	481477	3622623	1227	8.84E-07	5.59E-07	3.84E-08	5.14E-07	4.54E-07	2.30E-08	6.49E-07	4.32E-07	2.00E-08	1.48E-06	1.82E-03
98	6300	1026	481506	3622425	2097	5.32E-07	3.86E-07	2.80E-08	3.75E-07	3.31E-07	1.68E-08	4.74E-07	3.15E-07	1.46E-08	9.47E-07	1.99E-03
99	6300	1027	481117	3622474	0	2.67E-07	2.12E-07	1.58E-08	2.12E-07	1.87E-07	9.48E-09	2.68E-07	1.78E-07	8.25E-09	4.95E-07	0.00E+00
100	6300	1028	480990	3622490	0	1.91E-07	1.67E-07	1.28E-08	1.71E-07	1.51E-07	7.66E-09	2.16E-07	1.44E-07	6.66E-09	3.71E-07	0.00E+00

Table D-A4.5-1 Cancer Burden Calculations, Alternative 4

						HARP Output, Exposure Scenario A			HARP Output, Exposure Scenario B			HARP Output, Exposure Scenario C			Cancer Burden Calculation	
Rec #	*Census Tract*	*Census Block*	*UTM X (m)*	*UTM Y (m)*	*Population [(1)]*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Max Cancer Risk [(2)]*	*Cancer Burden [(3)]*
101	6300	1040	481473	3622228	0	3.35E-07	2.70E-07	2.02E-08	2.71E-07	2.39E-07	1.21E-08	3.42E-07	2.27E-07	1.05E-08	6.25E-07	0.00E+00
102	6300	1041	481347	3622138	0	2.29E-07	2.01E-07	1.54E-08	2.07E-07	1.82E-07	9.23E-09	2.61E-07	1.74E-07	8.04E-09	4.46E-07	0.00E+00
103	6300	1042	481997	3622226	0	4.81E-07	4.35E-07	3.37E-08	4.52E-07	3.99E-07	2.02E-08	5.70E-07	3.80E-07	1.76E-08	9.68E-07	0.00E+00
104	6300	1043	482371	3622375	0	6.89E-07	6.63E-07	5.21E-08	6.98E-07	6.16E-07	3.12E-08	8.81E-07	5.87E-07	2.72E-08	1.50E-06	0.00E+00
105	6300	1044	481766	3621972	0	2.77E-07	2.52E-07	1.95E-08	2.61E-07	2.30E-07	1.17E-08	3.30E-07	2.19E-07	1.02E-08	5.59E-07	0.00E+00
106	6500	1012	480774	3623988	0	7.56E-08	1.56E-07	1.39E-08	1.86E-07	1.64E-07	8.31E-09	2.35E-07	1.56E-07	7.23E-09	3.98E-07	0.00E+00
107	6500	1020	480584	3623739	164	7.71E-08	1.28E-07	1.11E-08	1.48E-07	1.31E-07	6.63E-09	1.87E-07	1.25E-07	5.77E-09	3.18E-07	5.21E-05
108	6500	1026	480924	3624158	0	1.42E-07	2.13E-07	1.82E-08	2.44E-07	2.15E-07	1.09E-08	3.08E-07	2.05E-07	9.48E-09	5.22E-07	0.00E+00
109	6500	1027	481013	3624093	9	2.17E-07	3.11E-07	2.64E-08	3.54E-07	3.13E-07	1.58E-08	4.47E-07	2.98E-07	1.38E-08	7.59E-07	6.83E-06
110	6500	1028	480856	3624082	0	1.09E-07	1.94E-07	1.70E-08	2.28E-07	2.01E-07	1.02E-08	2.87E-07	1.91E-07	8.85E-09	4.87E-07	0.00E+00
111	6500	1029	481098	3623877	21	4.14E-07	7.04E-07	6.12E-08	8.20E-07	7.24E-07	3.67E-08	1.04E-06	6.89E-07	3.19E-08	1.76E-06	3.69E-05
112	6500	1030	480967	3624029	0	1.82E-07	3.19E-07	2.79E-08	3.73E-07	3.29E-07	1.67E-08	4.71E-07	3.13E-07	1.45E-08	7.99E-07	0.00E+00
113	6500	1031	481147	3624094	0	3.69E-07	4.59E-07	3.80E-08	5.10E-07	4.50E-07	2.28E-08	6.43E-07	4.28E-07	1.98E-08	1.09E-06	0.00E+00
114	6500	1032	481005	3624291	0	1.71E-07	2.17E-07	1.80E-08	2.42E-07	2.13E-07	1.08E-08	3.05E-07	2.03E-07	9.40E-09	5.17E-07	0.00E+00
115	6500	1033	481229	3623656	32	1.50E-06	1.97E-06	1.65E-07	2.21E-06	1.95E-06	9.88E-08	2.79E-06	1.86E-06	8.60E-08	4.73E-06	1.51E-04
116	6500	1034	481119	3623590	13	7.31E-07	2.77E-06	2.57E-07	3.45E-06	3.04E-06	1.54E-07	4.35E-06	2.90E-06	1.34E-07	7.38E-06	9.59E-05
117	6500	1035	480843	3623829	0	1.00E-07	2.98E-07	2.73E-08	3.65E-07	3.22E-07	1.63E-08	4.61E-07	3.07E-07	1.42E-08	7.83E-07	0.00E+00
118	6500	1036	480862	3623941	2	1.10E-07	2.64E-07	2.38E-08	3.18E-07	2.81E-07	1.42E-08	4.02E-07	2.68E-07	1.24E-08	6.82E-07	1.36E-06
119	6500	1037	480825	3623991	0	9.39E-08	1.98E-07	1.77E-08	2.37E-07	2.09E-07	1.06E-08	2.99E-07	1.99E-07	9.21E-09	5.07E-07	0.00E+00
120	6500	1038	480879	3623512	115	2.05E-07	8.78E-07	8.20E-08	1.10E-06	9.70E-07	4.91E-08	1.39E-06	9.23E-07	4.27E-08	2.35E-06	2.71E-04
121	6500	1039	480805	3623723	0	1.03E-07	2.59E-07	2.34E-08	3.14E-07	2.77E-07	1.40E-08	3.96E-07	2.64E-07	1.22E-08	6.72E-07	0.00E+00
122	6500	1040	481393	3623244	0	3.15E-05	9.22E-06	3.22E-07	4.32E-06	3.81E-06	1.93E-07	5.45E-06	3.63E-06	1.68E-07	4.11E-05	0.00E+00
123	6500	1041	481156	3623361	0	2.29E-06	9.07E-06	8.44E-07	1.13E-05	9.98E-06	5.05E-07	1.43E-05	9.50E-06	4.40E-07	2.42E-05	0.00E+00
124	6500	1042	481534	3623158	2	1.07E-05	4.67E-06	2.60E-07	3.49E-06	3.08E-06	1.56E-07	4.40E-06	2.93E-06	1.36E-07	1.56E-05	3.12E-05
125	6500	1043	481419	3623109	2	2.75E-05	7.04E-06	1.82E-07	2.44E-06	2.15E-06	1.09E-07	3.08E-06	2.05E-06	9.49E-08	3.48E-05	6.95E-05
126	6500	1044	481346	3623082	0	1.80E-05	4.81E-06	1.39E-07	1.87E-06	1.65E-06	8.35E-08	2.36E-06	1.57E-06	7.27E-08	2.30E-05	0.00E+00
127	6500	1047	480910	3623907	0	1.40E-07	3.68E-07	3.34E-08	4.48E-07	3.95E-07	2.00E-08	5.65E-07	3.76E-07	1.74E-08	9.59E-07	0.00E+00
128	6500	1048	480935	3623987	5	1.59E-07	3.23E-07	2.87E-08	3.84E-07	3.39E-07	1.72E-08	4.85E-07	3.23E-07	1.49E-08	8.23E-07	4.11E-06
129	6500	2002	481905	3624352	0	1.53E-07	2.85E-07	2.51E-08	3.36E-07	2.96E-07	1.50E-08	4.24E-07	2.82E-07	1.31E-08	7.19E-07	0.00E+00
130	6500	2003	481574	3624672	0	2.05E-07	3.18E-07	2.73E-08	3.66E-07	3.23E-07	1.64E-08	4.62E-07	3.08E-07	1.42E-08	7.84E-07	0.00E+00
131	6500	2004	481504	3624702	0	2.00E-07	3.00E-07	2.57E-08	3.44E-07	3.04E-07	1.54E-08	4.35E-07	2.89E-07	1.34E-08	7.37E-07	0.00E+00
132	6500	2005	481521	3624643	0	2.18E-07	3.38E-07	2.91E-08	3.90E-07	3.44E-07	1.74E-08	4.92E-07	3.27E-07	1.52E-08	8.34E-07	0.00E+00
133	6500	2006	481266	3624626	0	2.13E-07	2.69E-07	2.24E-08	3.00E-07	2.65E-07	1.34E-08	3.79E-07	2.52E-07	1.17E-08	6.43E-07	0.00E+00
134	6500	2014	481185	3624351	1	2.79E-07	3.53E-07	2.94E-08	3.93E-07	3.47E-07	1.76E-08	4.96E-07	3.30E-07	1.53E-08	8.42E-07	8.42E-07
135	6500	2015	481209	3624520	0	2.33E-07	2.96E-07	2.46E-08	3.30E-07	2.91E-07	1.48E-08	4.17E-07	2.77E-07	1.28E-08	7.07E-07	0.00E+00
136	6500	2016	481334	3624581	0	2.38E-07	3.33E-07	2.82E-08	3.77E-07	3.33E-07	1.69E-08	4.76E-07	3.17E-07	1.47E-08	8.08E-07	0.00E+00
137	6500	2017	481425	3624621	0	2.29E-07	3.39E-07	2.90E-08	3.88E-07	3.42E-07	1.73E-08	4.90E-07	3.26E-07	1.51E-08	8.31E-07	0.00E+00
138	6500	2018	481450	3624517	0	2.59E-07	4.03E-07	3.46E-08	4.63E-07	4.09E-07	2.07E-08	5.85E-07	3.89E-07	1.80E-08	9.92E-07	0.00E+00
139	6500	2024	481311	3624312	0	3.44E-07	5.09E-07	4.34E-08	5.82E-07	5.13E-07	2.60E-08	7.34E-07	4.89E-07	2.26E-08	1.25E-06	0.00E+00
140	6500	2025	481381	3624417	0	2.99E-07	4.56E-07	3.91E-08	5.24E-07	4.62E-07	2.34E-08	6.61E-07	4.40E-07	2.04E-08	1.12E-06	0.00E+00
141	6500	2026	481293	3624482	0	2.66E-07	3.65E-07	3.08E-08	4.12E-07	3.64E-07	1.84E-08	5.21E-07	3.47E-07	1.60E-08	8.83E-07	0.00E+00
142	6500	2027	481475	3623906	71	7.35E-07	2.21E-06	2.03E-07	2.72E-06	2.40E-06	1.22E-07	3.43E-06	2.28E-06	1.06E-07	5.82E-06	4.13E-04
143	6500	2028	481578	3623938	0	5.74E-07	1.45E-06	1.31E-07	1.76E-06	1.55E-06	7.87E-08	2.22E-06	1.48E-06	6.85E-08	3.77E-06	0.00E+00
144	6500	2029	481457	3624015	1	5.90E-07	1.43E-06	1.29E-07	1.73E-06	1.53E-06	7.74E-08	2.19E-06	1.46E-06	6.74E-08	3.71E-06	3.71E-06
145	6500	2030	481536	3624112	0	4.48E-07	9.51E-07	8.48E-08	1.14E-06	1.00E-06	5.07E-08	1.43E-06	9.54E-07	4.42E-08	2.43E-06	0.00E+00
146	6500	2031	481579	3624357	0	3.00E-07	5.34E-07	4.67E-08	6.26E-07	5.53E-07	2.80E-08	7.90E-07	5.26E-07	2.44E-08	1.34E-06	0.00E+00
147	6500	2032	481577	3624540	0	2.39E-07	3.92E-07	3.40E-08	4.55E-07	4.01E-07	2.03E-08	5.74E-07	3.82E-07	1.77E-08	9.74E-07	0.00E+00
148	6500	2033	481759	3624242	18	2.44E-07	4.89E-07	4.34E-08	5.81E-07	5.12E-07	2.60E-08	7.33E-07	4.88E-07	2.26E-08	1.24E-06	2.24E-05
149	6500	2034	481772	3624444	1	1.52E-07	2.80E-07	2.46E-08	3.29E-07	2.90E-07	1.47E-08	4.15E-07	2.76E-07	1.28E-08	7.04E-07	7.04E-07
150	6500	2035	481689	3623733	44	8.06E-07	2.22E-06	2.02E-07	2.71E-06	2.39E-06	1.21E-07	3.42E-06	2.28E-06	1.05E-07	5.80E-06	2.55E-04

Table D-A4.5-1 Cancer Burden Calculations, Alternative 4

						HARP Output, Exposure Scenario A			HARP Output, Exposure Scenario B			HARP Output, Exposure Scenario C			Cancer Burden Calculation	
Rec #	Census Tract	Census Block	UTM X (m)	UTM Y (m)	Population [(1)]	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Max Cancer Risk [(2)]	Cancer Burden [(3)]
151	6500	2036	481753	3623821	7	6.02E-07	1.31E-06	1.17E-07	1.56E-06	1.38E-06	6.99E-08	1.97E-06	1.31E-06	6.09E-08	3.35E-06	2.35E-05
152	6500	2037	481667	3623884	11	5.83E-07	1.36E-06	1.22E-07	1.64E-06	1.45E-06	7.33E-08	2.07E-06	1.38E-06	6.38E-08	3.51E-06	3.86E-05
153	6500	2038	481745	3623991	8	4.12E-07	8.51E-07	7.56E-08	1.01E-06	8.94E-07	4.53E-08	1.28E-06	8.51E-07	3.94E-08	2.17E-06	1.74E-05
154	6500	2039	481775	3623670	0	7.14E-07	2.08E-06	1.90E-07	2.55E-06	2.25E-06	1.14E-07	3.21E-06	2.14E-06	9.91E-08	5.45E-06	0.00E+00
155	6500	2040	481830	3623755	2	5.66E-07	1.27E-06	1.14E-07	1.52E-06	1.34E-06	6.80E-08	1.92E-06	1.28E-06	5.92E-08	3.26E-06	6.52E-06
156	6500	2041	481926	3623721	37	4.33E-07	9.78E-07	8.76E-08	1.17E-06	1.04E-06	5.25E-08	1.48E-06	9.86E-07	4.57E-08	2.51E-06	9.30E-05
157	6500	2042	481890	3623679	9	4.88E-07	1.25E-06	1.14E-07	1.52E-06	1.34E-06	6.80E-08	1.92E-06	1.28E-06	5.92E-08	3.26E-06	2.93E-05
158	6500	2043	482006	3623617	0	3.06E-07	8.78E-07	8.02E-08	1.07E-06	9.48E-07	4.80E-08	1.36E-06	9.03E-07	4.18E-08	2.30E-06	0.00E+00
159	6500	2044	481432	3624258	0	3.81E-07	6.64E-07	5.79E-08	7.75E-07	6.84E-07	3.47E-08	9.79E-07	6.51E-07	3.02E-08	1.66E-06	0.00E+00
160	6500	2045	481934	3623538	6	4.06E-07	1.62E-06	1.51E-07	2.02E-06	1.78E-06	9.01E-08	2.55E-06	1.69E-06	7.84E-08	4.32E-06	2.59E-05
161	6500	2046	481861	3623607	0	5.28E-07	1.75E-06	1.61E-07	2.16E-06	1.90E-06	9.64E-08	2.72E-06	1.81E-06	8.39E-08	4.62E-06	0.00E+00
162	6500	2047	481799	3623522	12	6.69E-07	3.26E-06	3.06E-07	4.10E-06	3.62E-06	1.83E-07	5.18E-06	3.45E-06	1.60E-07	8.78E-06	1.05E-04
163	6500	2048	481715	3623564	27	9.61E-07	4.49E-06	4.21E-07	5.64E-06	4.98E-06	2.52E-07	7.12E-06	4.74E-06	2.20E-07	1.21E-05	3.26E-04
164	6500	2049	481722	3624169	62	3.06E-07	6.41E-07	5.71E-08	7.65E-07	6.75E-07	3.42E-08	9.65E-07	6.42E-07	2.97E-08	1.64E-06	1.02E-04
165	6500	2050	481113	3624288	5	2.54E-07	3.12E-07	2.58E-08	3.45E-07	3.05E-07	1.54E-08	4.36E-07	2.90E-07	1.34E-08	7.40E-07	3.70E-06
166	6500	2051	481157	3624151	0	3.48E-07	4.34E-07	3.61E-08	4.83E-07	4.26E-07	2.16E-08	6.10E-07	4.06E-07	1.88E-08	1.03E-06	0.00E+00
167	6500	2052	481261	3624095	2	4.86E-07	7.56E-07	6.50E-08	8.71E-07	7.69E-07	3.89E-08	1.10E-06	7.32E-07	3.39E-08	1.87E-06	3.73E-06
168	6500	2053	482146	3623236	40	3.80E-07	1.59E-06	1.49E-07	1.99E-06	1.76E-06	8.91E-08	2.52E-06	1.68E-06	7.76E-08	4.27E-06	1.71E-04
169	6500	2054	482160	3623417	357	2.02E-07	7.77E-07	7.22E-08	9.67E-07	8.54E-07	4.32E-08	1.22E-06	8.13E-07	3.76E-08	2.07E-06	7.40E-04
170	6500	2055	482043	3623486	31	2.90E-07	1.15E-06	1.07E-07	1.43E-06	1.27E-06	6.41E-08	1.81E-06	1.20E-06	5.58E-08	3.07E-06	9.52E-05
171	6500	2056	481974	3623407	1	3.91E-07	2.07E-06	1.96E-07	2.62E-06	2.31E-06	1.17E-07	3.31E-06	2.20E-06	1.02E-07	5.61E-06	5.61E-06
172	6500	2057	481884	3623458	7	4.96E-07	2.69E-06	2.54E-07	3.40E-06	3.00E-06	1.52E-07	4.29E-06	2.86E-06	1.32E-07	7.29E-06	5.10E-05
173	6500	2058	482371	3623192	38	2.30E-07	7.75E-07	7.16E-08	9.58E-07	8.46E-07	4.28E-08	1.21E-06	8.05E-07	3.73E-08	2.05E-06	7.80E-05
174	6500	2059	481151	3624119	0	3.60E-07	4.47E-07	3.71E-08	4.97E-07	4.38E-07	2.22E-08	6.27E-07	4.17E-07	1.93E-08	1.06E-06	0.00E+00
175	6500	3000	481234	3624040	0	5.18E-07	7.70E-07	6.57E-08	8.80E-07	7.77E-07	3.93E-08	1.11E-06	7.40E-07	3.42E-08	1.89E-06	0.00E+00
176	6500	3001	481282	3623976	0	6.48E-07	1.39E-06	1.24E-07	1.66E-06	1.46E-06	7.40E-08	2.09E-06	1.39E-06	6.44E-08	3.55E-06	0.00E+00
177	6500	3002	481249	3623924	0	6.97E-07	1.30E-06	1.14E-07	1.53E-06	1.35E-06	6.83E-08	1.93E-06	1.28E-06	5.94E-08	3.27E-06	0.00E+00
178	6500	3003	481398	3623623	0	2.18E-06	1.05E-05	9.83E-07	1.32E-05	1.16E-05	5.88E-07	1.66E-05	1.11E-05	5.12E-07	2.82E-05	0.00E+00
179	6500	3004	481514	3623697	0	1.29E-06	8.35E-06	7.93E-07	1.06E-05	9.37E-06	4.75E-07	1.34E-05	8.93E-06	4.13E-07	2.28E-05	0.00E+00
180	6500	3005	481516	3623735	0	1.04E-06	5.06E-06	4.75E-07	6.37E-06	5.62E-06	2.85E-07	8.04E-06	5.35E-06	2.48E-07	1.36E-05	0.00E+00
181	6500	3006	481755	3623445	0	8.56E-07	6.35E-06	6.05E-07	8.10E-06	7.15E-06	3.62E-07	1.02E-05	6.81E-06	3.15E-07	1.73E-05	0.00E+00
182	6500	3007	481817	3623312	0	8.63E-07	7.90E-06	7.56E-07	1.01E-05	8.94E-06	4.53E-07	1.28E-05	8.51E-06	3.94E-07	2.17E-05	0.00E+00
183	6500	3008	481679	3623267	0	2.23E-06	1.29E-05	1.22E-06	1.63E-05	1.44E-05	7.31E-07	2.06E-05	1.37E-05	6.36E-07	3.50E-05	0.00E+00
184	6500	3009	481855	3623013	0	3.04E-06	4.90E-06	4.23E-07	5.67E-06	5.00E-06	2.53E-07	7.16E-06	4.76E-06	2.21E-07	1.21E-05	0.00E+00
185	6500	3010	481427	3623333	0	1.09E-05	5.90E-06	3.76E-07	5.03E-06	4.44E-06	2.25E-07	6.35E-06	4.23E-06	1.96E-07	1.72E-05	0.00E+00
186	6500	3011	481930	3622970	0	2.52E-06	3.88E-06	3.33E-07	4.46E-06	3.93E-06	1.99E-07	5.62E-06	3.74E-06	1.73E-07	9.54E-06	0.00E+00
187	6500	3012	481936	3622930	0	2.52E-06	3.03E-06	2.50E-07	3.34E-06	2.95E-06	1.49E-07	4.22E-06	2.81E-06	1.30E-07	7.16E-06	0.00E+00
188	6500	3013	481842	3622985	0	3.25E-06	3.70E-06	3.02E-07	4.04E-06	3.57E-06	1.81E-07	5.10E-06	3.40E-06	1.57E-07	8.66E-06	0.00E+00
189	6500	3014	482069	3623076	0	1.22E-06	4.20E-06	3.88E-07	5.20E-06	4.59E-06	2.32E-07	6.56E-06	4.37E-06	2.02E-07	1.11E-05	0.00E+00
190	6500	3015	482186	3623017	0	1.06E-06	2.77E-06	2.52E-07	3.37E-06	2.98E-06	1.51E-07	4.26E-06	2.83E-06	1.31E-07	7.22E-06	0.00E+00
191	6500	3016	482325	3622935	0	9.30E-07	1.94E-06	1.73E-07	2.31E-06	2.04E-06	1.03E-07	2.92E-06	1.94E-06	8.99E-08	4.95E-06	0.00E+00
192	6500	3017	482167	3623111	0	7.32E-07	2.47E-06	2.28E-07	3.05E-06	2.70E-06	1.37E-07	3.86E-06	2.57E-06	1.19E-07	6.54E-06	0.00E+00
193	6500	3018	481950	3623245	0	7.96E-07	4.85E-06	4.60E-07	6.15E-06	5.43E-06	2.75E-07	7.77E-06	5.17E-06	2.39E-07	1.32E-05	0.00E+00
194	6500	3019	482129	3623190	0	5.50E-07	2.24E-06	2.09E-07	2.79E-06	2.47E-06	1.25E-07	3.53E-06	2.35E-06	1.09E-07	5.98E-06	0.00E+00
195	6500	3020	482303	3622832	0	1.17E-06	1.79E-06	1.54E-07	2.06E-06	1.82E-06	9.20E-08	2.60E-06	1.73E-06	8.01E-08	4.41E-06	0.00E+00
196	6500	3021	481994	3622998	209	1.99E-06	4.63E-06	4.16E-07	5.57E-06	4.92E-06	2.49E-07	7.04E-06	4.68E-06	2.17E-07	1.19E-05	2.49E-03
197	6500	3022	482508	3622723	0	8.75E-07	1.23E-06	1.04E-07	1.40E-06	1.23E-06	6.24E-08	1.76E-06	1.17E-06	5.43E-08	2.99E-06	0.00E+00
198	6500	3023	482202	3622889	0	1.37E-06	2.28E-06	1.98E-07	2.65E-06	2.34E-06	1.19E-07	3.35E-06	2.23E-06	1.03E-07	5.68E-06	0.00E+00
199	6500	3024	482406	3622775	0	1.01E-06	1.46E-06	1.24E-07	1.66E-06	1.47E-06	7.44E-08	2.10E-06	1.40E-06	6.47E-08	3.56E-06	0.00E+00
200	6500	3025	482105	3622947	0	1.60E-06	3.08E-06	2.72E-07	3.64E-06	3.22E-06	1.63E-07	4.60E-06	3.06E-06	1.42E-07	7.81E-06	0.00E+00

Table D-A4.5-1 Cancer Burden Calculations, Alternative 4

						HARP Output, Exposure Scenario A			*HARP Output, Exposure Scenario B*			*HARP Output, Exposure Scenario C*			*Cancer Burden Calculation*	
Rec #	*Census Tract*	*Census Block*	*UTM X (m)*	*UTM Y (m)*	*Population* [(1)]	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Max Cancer Risk* [(2)]	*Cancer Burden* [(3)]
201	6500	3026	481878	3623044	0	2.64E-06	7.31E-06	6.67E-07	8.93E-06	7.88E-06	3.99E-07	1.13E-05	7.50E-06	3.47E-07	1.91E-05	0.00E+00
202	6500	3027	482880	3622477	0	5.69E-07	7.15E-07	5.94E-08	7.96E-07	7.02E-07	3.56E-08	1.00E-06	6.69E-07	3.10E-08	1.70E-06	0.00E+00
203	6500	3028	482954	3622485	0	5.43E-07	6.93E-07	5.78E-08	7.74E-07	6.83E-07	3.46E-08	9.77E-07	6.50E-07	3.01E-08	1.66E-06	0.00E+00
204	6500	3029	482660	3622655	1	7.22E-07	9.96E-07	8.41E-08	1.13E-06	9.94E-07	5.04E-08	1.42E-06	9.47E-07	4.38E-08	2.41E-06	2.41E-06
205	6500	3030	482654	3622747	0	6.77E-07	1.08E-06	9.34E-08	1.25E-06	1.10E-06	5.59E-08	1.58E-06	1.05E-06	4.87E-08	2.68E-06	0.00E+00
206	6500	3031	482441	3622868	0	8.31E-07	1.53E-06	1.35E-07	1.80E-06	1.59E-06	8.05E-08	2.27E-06	1.51E-06	7.01E-08	3.86E-06	0.00E+00
207	6500	3032	482479	3622938	3	5.89E-07	1.32E-06	1.19E-07	1.59E-06	1.40E-06	7.10E-08	2.01E-06	1.34E-06	6.18E-08	3.40E-06	1.02E-05
208	6500	3033	482360	3623004	0	6.33E-07	1.62E-06	1.47E-07	1.96E-06	1.73E-06	8.78E-08	2.48E-06	1.65E-06	7.64E-08	4.21E-06	0.00E+00
209	6500	3034	482467	3623004	0	4.45E-07	1.15E-06	1.04E-07	1.40E-06	1.23E-06	6.25E-08	1.76E-06	1.17E-06	5.44E-08	2.99E-06	0.00E+00
210	6500	3035	482487	3623042	0	3.64E-07	1.01E-06	9.17E-08	1.23E-06	1.08E-06	5.49E-08	1.55E-06	1.03E-06	4.78E-08	2.63E-06	0.00E+00
211	6500	3036	482551	3623087	118	2.43E-07	6.99E-07	6.38E-08	8.55E-07	7.54E-07	3.82E-08	1.08E-06	7.18E-07	3.33E-08	1.83E-06	2.16E-04
212	6500	3037	482732	3623046	191	2.09E-07	5.59E-07	5.08E-08	6.80E-07	6.00E-07	3.04E-08	8.59E-07	5.71E-07	2.65E-08	1.46E-06	2.78E-04
213	6500	3038	482795	3622861	9	3.54E-07	7.61E-07	6.79E-08	9.10E-07	8.03E-07	4.07E-08	1.15E-06	7.64E-07	3.54E-08	1.95E-06	1.75E-05
214	6500	3039	482634	3622961	0	3.77E-07	9.27E-07	8.37E-08	1.12E-06	9.89E-07	5.01E-08	1.42E-06	9.42E-07	4.36E-08	2.40E-06	0.00E+00
215	6500	3040	482740	3622849	0	4.02E-07	8.25E-07	7.33E-08	9.81E-07	8.66E-07	4.39E-08	1.24E-06	8.25E-07	3.82E-08	2.10E-06	0.00E+00
216	6500	3041	482701	3622814	0	5.34E-07	9.97E-07	8.77E-08	1.17E-06	1.04E-06	5.25E-08	1.48E-06	9.87E-07	4.57E-08	2.51E-06	0.00E+00
217	6500	3042	482951	3622679	0	4.35E-07	7.05E-07	6.10E-08	8.17E-07	7.21E-07	3.65E-08	1.03E-06	6.86E-07	3.18E-08	1.75E-06	0.00E+00
218	6500	3043	482946	3622718	0	3.92E-07	6.83E-07	5.95E-08	7.97E-07	7.04E-07	3.56E-08	1.01E-06	6.70E-07	3.10E-08	1.71E-06	0.00E+00
219	6500	3044	483139	3622538	0	4.26E-07	6.12E-07	5.20E-08	6.96E-07	6.14E-07	3.11E-08	8.79E-07	5.85E-07	2.71E-08	1.49E-06	0.00E+00
220	6500	3045	483027	3622601	0	4.57E-07	6.79E-07	5.80E-08	7.77E-07	6.86E-07	3.47E-08	9.81E-07	6.53E-07	3.02E-08	1.66E-06	0.00E+00
221	6500	3046	482860	3622638	0	5.64E-07	8.18E-07	6.96E-08	9.33E-07	8.23E-07	4.17E-08	1.18E-06	7.84E-07	3.63E-08	2.00E-06	0.00E+00
222	6500	3047	483000	3622534	0	5.12E-07	6.95E-07	5.85E-08	7.84E-07	6.92E-07	3.50E-08	9.89E-07	6.58E-07	3.05E-08	1.68E-06	0.00E+00
223	6500	3048	483023	3622575	0	4.81E-07	6.91E-07	5.87E-08	7.86E-07	6.94E-07	3.52E-08	9.93E-07	6.61E-07	3.06E-08	1.68E-06	0.00E+00
224	6500	3049	483096	3622513	9	4.65E-07	6.40E-07	5.40E-08	7.23E-07	6.39E-07	3.23E-08	9.13E-07	6.08E-07	2.81E-08	1.55E-06	1.39E-05
225	6500	3050	483166	3622430	0	4.48E-07	5.85E-07	4.90E-08	6.56E-07	5.79E-07	2.93E-08	8.29E-07	5.52E-07	2.55E-08	1.41E-06	0.00E+00
226	6500	3051	482825	3622908	37	2.84E-07	6.63E-07	5.96E-08	7.99E-07	7.05E-07	3.57E-08	1.01E-06	6.71E-07	3.11E-08	1.71E-06	6.33E-05
227	6500	3052	482897	3622942	86	1.99E-07	4.81E-07	4.34E-08	5.81E-07	5.12E-07	2.60E-08	7.33E-07	4.88E-07	2.26E-08	1.24E-06	1.07E-04
228	6500	3053	482937	3622854	7	2.71E-07	6.03E-07	5.39E-08	7.22E-07	6.37E-07	3.23E-08	9.12E-07	6.07E-07	2.81E-08	1.55E-06	1.08E-05
229	6500	3054	482989	3622385	0	5.06E-07	6.19E-07	5.12E-08	6.86E-07	6.06E-07	3.07E-08	8.66E-07	5.77E-07	2.67E-08	1.47E-06	0.00E+00
230	6600	1000	480860	3623209	289	2.99E-07	3.15E-07	2.53E-08	3.39E-07	2.99E-07	1.52E-08	4.28E-07	2.85E-07	1.32E-08	7.27E-07	2.10E-04
231	6600	1013	480715	3622950	241	1.54E-07	1.44E-07	1.13E-08	1.51E-07	1.33E-07	6.75E-09	1.91E-07	1.27E-07	5.88E-09	3.23E-07	7.80E-05
232	6600	1014	480797	3622986	177	1.99E-07	1.83E-07	1.43E-08	1.91E-07	1.69E-07	8.55E-09	2.41E-07	1.61E-07	7.44E-09	4.10E-07	7.25E-05
233	6600	1015	480889	3622963	110	2.57E-07	2.31E-07	1.79E-08	2.39E-07	2.11E-07	1.07E-08	3.02E-07	2.01E-07	9.31E-09	5.13E-07	5.64E-05
234	6802	1000	480600	3623515	7	1.16E-07	1.63E-07	1.38E-08	1.85E-07	1.63E-07	8.26E-09	2.33E-07	1.55E-07	7.19E-09	3.96E-07	2.77E-06
235	8902	1014	481508	3624720	0	1.94E-07	2.91E-07	2.49E-08	3.34E-07	2.95E-07	1.49E-08	4.21E-07	2.81E-07	1.30E-08	7.15E-07	0.00E+00
Total																**1.35E-02**

Legend : Rec = receptor; UTM = universe transverse mercator coordinates; m = meter; HARP = hot spots analysis & reporting program; 3TM = third trimester before birth.

Notes : [(1)]Population data are provided by HARP and are from the 2010 U.S. Census.

[(2)]The 70-year cancer risk is the same as the 30-year cancer risk because the construction period would fit entirely within the 30-year residential exposure period.

[(3)]Cancer burden = population x cancer risk.

Table D-A4.5-2 Cancer Burden Calculations, Alternative 5

						HARP Output, Exposure Scenario A			HARP Output, Exposure Scenario B			HARP Output, Exposure Scenario C			Cancer Burden Calculation	
Rec #	Census Tract	Census Block	UTM X (m)	UTM Y (m)	Population [1]	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Max Cancer Risk [2]	Cancer Burden [3]
1	100	2002	482056	3624262	31	1.63E-07	2.14E-07	1.76E-08	2.42E-07	2.10E-07	1.06E-08	2.99E-07	2.00E-07	9.20E-09	5.09E-07	1.58E-05
2	100	2008	482182	3623960	250	1.66E-07	2.25E-07	1.86E-08	2.56E-07	2.22E-07	1.12E-08	3.16E-07	2.12E-07	9.71E-09	5.38E-07	1.34E-04
3	100	2012	482060	3624169	40	1.79E-07	2.31E-07	1.90E-08	2.61E-07	2.27E-07	1.14E-08	3.23E-07	2.16E-07	9.91E-09	5.49E-07	2.19E-05
4	100	2015	482293	3624015	33	1.35E-07	1.77E-07	1.46E-08	2.01E-07	1.75E-07	8.77E-09	2.49E-07	1.66E-07	7.63E-09	4.23E-07	1.39E-05
5	100	2016	482256	3623930	13	1.44E-07	1.98E-07	1.64E-08	2.25E-07	1.96E-07	9.84E-09	2.79E-07	1.87E-07	8.56E-09	4.74E-07	6.16E-06
6	100	2017	481822	3624096	41	2.98E-07	4.60E-07	3.89E-08	5.34E-07	4.64E-07	2.33E-08	6.61E-07	4.42E-07	2.03E-08	1.12E-06	4.61E-05
7	100	2022	482137	3623754	1	1.77E-07	2.93E-07	2.51E-08	3.44E-07	2.99E-07	1.50E-08	4.25E-07	2.85E-07	1.31E-08	7.23E-07	7.23E-07
8	100	2023	482281	3623597	83	1.30E-07	2.63E-07	2.30E-08	3.15E-07	2.74E-07	1.38E-08	3.90E-07	2.61E-07	1.20E-08	6.63E-07	5.50E-05
9	100	2024	482197	3623702	28	1.51E-07	2.74E-07	2.36E-08	3.24E-07	2.82E-07	1.42E-08	4.01E-07	2.68E-07	1.23E-08	6.82E-07	1.91E-05
10	100	2025	482051	3623682	0	2.22E-07	4.28E-07	3.72E-08	5.11E-07	4.44E-07	2.23E-08	6.32E-07	4.23E-07	1.94E-08	1.07E-06	0.00E+00
11	100	2026	481889	3623880	40	3.90E-07	5.75E-07	4.84E-08	6.63E-07	5.76E-07	2.90E-08	8.21E-07	5.49E-07	2.52E-08	1.40E-06	5.58E-05
12	100	2027	482403	3623646	25	1.05E-07	1.85E-07	1.59E-08	2.18E-07	1.90E-07	9.53E-09	2.70E-07	1.81E-07	8.29E-09	4.59E-07	1.15E-05
13	100	2028	482362	3623741	9	1.09E-07	1.82E-07	1.56E-08	2.14E-07	1.86E-07	9.34E-09	2.65E-07	1.77E-07	8.13E-09	4.50E-07	4.05E-06
14	100	2029	482328	3623700	20	1.15E-07	2.03E-07	1.75E-08	2.39E-07	2.08E-07	1.05E-08	2.96E-07	1.98E-07	9.10E-09	5.04E-07	1.01E-05
15	100	2032	482403	3623443	52	1.23E-07	2.74E-07	2.41E-08	3.31E-07	2.87E-07	1.44E-08	4.09E-07	2.74E-07	1.26E-08	6.96E-07	3.62E-05
16	100	2033	482456	3623565	36	1.05E-07	1.86E-07	1.61E-08	2.20E-07	1.91E-07	9.62E-09	2.73E-07	1.82E-07	8.37E-09	4.63E-07	1.67E-05
17	100	2035	482590	3623410	109	1.00E-07	2.03E-07	1.78E-08	2.44E-07	2.12E-07	1.06E-08	3.02E-07	2.02E-07	9.27E-09	5.13E-07	5.59E-05
18	100	2036	482703	3623366	16	8.90E-08	1.80E-07	1.57E-08	2.15E-07	1.87E-07	9.40E-09	2.66E-07	1.78E-07	8.18E-09	4.53E-07	7.25E-06
19	100	2037	482742	3623425	11	8.14E-08	1.48E-07	1.27E-08	1.75E-07	1.52E-07	7.63E-09	2.16E-07	1.45E-07	6.64E-09	3.67E-07	4.04E-06
20	100	2038	482661	3623304	21	1.01E-07	2.26E-07	2.00E-08	2.74E-07	2.38E-07	1.20E-08	3.39E-07	2.27E-07	1.04E-08	5.76E-07	1.21E-05
21	100	2039	482535	3623556	24	9.61E-08	1.63E-07	1.40E-08	1.92E-07	1.67E-07	8.36E-09	2.37E-07	1.59E-07	7.28E-09	4.03E-07	9.67E-06
22	100	2044	482260	3623408	43	1.62E-07	4.44E-07	3.98E-08	5.46E-07	4.75E-07	2.39E-08	6.76E-07	4.52E-07	2.08E-08	1.15E-06	4.94E-05
23	100	2045	482277	3623322	16	1.76E-07	5.21E-07	4.70E-08	6.45E-07	5.61E-07	2.82E-08	7.98E-07	5.34E-07	2.45E-08	1.36E-06	2.17E-05
24	100	2046	482551	3623175	46	1.71E-07	4.16E-07	3.70E-08	5.07E-07	4.41E-07	2.22E-08	6.28E-07	4.20E-07	1.93E-08	1.07E-06	4.91E-05
25	100	2047	482581	3623197	9	1.45E-07	3.54E-07	3.15E-08	4.32E-07	3.75E-07	1.88E-08	5.34E-07	3.57E-07	1.64E-08	9.08E-07	8.17E-06
26	100	2048	482701	3623181	20	1.28E-07	2.92E-07	2.58E-08	3.54E-07	3.07E-07	1.54E-08	4.38E-07	2.93E-07	1.34E-08	7.44E-07	1.49E-05
27	100	2049	482768	3623254	41	9.98E-08	2.17E-07	1.91E-08	2.62E-07	2.28E-07	1.15E-08	3.25E-07	2.17E-07	9.97E-09	5.52E-07	2.26E-05
28	202	1004	483233	3623068	59	8.90E-08	1.62E-07	1.40E-08	1.92E-07	1.67E-07	8.37E-09	2.37E-07	1.59E-07	7.29E-09	4.03E-07	2.38E-05
29	202	1005	483198	3622963	65	1.16E-07	2.14E-07	1.85E-08	2.54E-07	2.21E-07	1.11E-08	3.15E-07	2.11E-07	9.66E-09	5.35E-07	3.48E-05
30	202	1006	483091	3622809	10	2.28E-07	3.99E-07	3.43E-08	4.71E-07	4.09E-07	2.05E-08	5.82E-07	3.90E-07	1.79E-08	9.90E-07	9.90E-06
31	202	1007	483130	3622870	40	1.69E-07	3.12E-07	2.70E-08	3.70E-07	3.22E-07	1.62E-08	4.58E-07	3.07E-07	1.41E-08	7.79E-07	3.12E-05
32	202	1008	483274	3622874	381	1.23E-07	2.23E-07	1.93E-08	2.64E-07	2.30E-07	1.15E-08	3.27E-07	2.19E-07	1.00E-08	5.56E-07	2.12E-04
33	202	1009	483386	3622730	79	1.48E-07	2.51E-07	2.15E-08	2.95E-07	2.57E-07	1.29E-08	3.65E-07	2.44E-07	1.12E-08	6.21E-07	4.90E-05
34	202	1010	483571	3622793	42	9.66E-08	1.69E-07	1.45E-08	1.99E-07	1.73E-07	8.67E-09	2.46E-07	1.64E-07	7.55E-09	4.18E-07	1.76E-05
35	202	1011	483299	3622674	50	1.98E-07	3.07E-07	2.59E-08	3.56E-07	3.09E-07	1.55E-08	4.40E-07	2.95E-07	1.35E-08	7.49E-07	3.74E-05
36	202	1012	483462	3622944	53	8.79E-08	1.50E-07	1.29E-08	1.77E-07	1.54E-07	7.71E-09	2.19E-07	1.46E-07	6.72E-09	3.72E-07	1.97E-05
37	202	1013	483399	3622583	63	2.41E-07	3.37E-07	2.81E-08	3.85E-07	3.35E-07	1.68E-08	4.77E-07	3.19E-07	1.46E-08	8.10E-07	5.10E-05
38	202	1014	483282	3622598	67	2.55E-07	3.47E-07	2.88E-08	3.95E-07	3.43E-07	1.72E-08	4.89E-07	3.27E-07	1.50E-08	8.30E-07	5.56E-05
39	202	1015	483165	3622720	30	2.67E-07	4.21E-07	3.57E-08	4.89E-07	4.25E-07	2.14E-08	6.06E-07	4.05E-07	1.86E-08	1.03E-06	3.09E-05
40	202	1016	483041	3622769	0	2.95E-07	4.79E-07	4.08E-08	5.59E-07	4.86E-07	2.44E-08	6.92E-07	4.63E-07	2.13E-08	1.18E-06	0.00E+00
41	202	1017	483049	3622710	0	3.23E-07	4.74E-07	3.98E-08	5.46E-07	4.75E-07	2.39E-08	6.76E-07	4.52E-07	2.08E-08	1.15E-06	0.00E+00
42	202	1018	483181	3622571	0	3.52E-07	4.38E-07	3.58E-08	4.91E-07	4.27E-07	2.14E-08	6.07E-07	4.06E-07	1.87E-08	1.03E-06	0.00E+00
43	202	2005	483124	3623066	125	1.19E-07	2.28E-07	1.98E-08	2.72E-07	2.36E-07	1.19E-08	3.36E-07	2.25E-07	1.03E-08	5.72E-07	7.14E-05
44	202	2006	483049	3623116	31	9.85E-08	1.92E-07	1.67E-08	2.29E-07	1.99E-07	1.00E-08	2.83E-07	1.90E-07	8.70E-09	4.82E-07	1.49E-05
45	202	2007	483094	3623179	42	8.15E-08	1.56E-07	1.35E-08	1.86E-07	1.62E-07	8.11E-09	2.30E-07	1.54E-07	7.06E-09	3.91E-07	1.64E-05
46	202	2008	482960	3622994	45	1.50E-07	2.95E-07	2.57E-08	3.52E-07	3.06E-07	1.54E-08	4.36E-07	2.92E-07	1.34E-08	7.41E-07	3.33E-05
47	202	2009	483004	3623055	53	1.21E-07	2.38E-07	2.07E-08	2.84E-07	2.47E-07	1.24E-08	3.52E-07	2.35E-07	1.08E-08	5.98E-07	3.17E-05
48	6100	1001	483577	3622442	36	1.95E-07	2.42E-07	1.98E-08	2.72E-07	2.36E-07	1.19E-08	3.36E-07	2.25E-07	1.03E-08	5.71E-07	2.06E-05
49	6100	1008	483476	3622296	75	2.97E-07	3.11E-07	2.45E-08	3.37E-07	2.93E-07	1.47E-08	4.17E-07	2.79E-07	1.28E-08	7.08E-07	5.31E-05
50	6100	1009	483372	3622435	25	3.16E-07	3.58E-07	2.88E-08	3.95E-07	3.43E-07	1.72E-08	4.89E-07	3.27E-07	1.50E-08	8.31E-07	2.08E-05

Table D-A4.5-2 Cancer Burden Calculations, Alternative 5

						HARP Output, Exposure Scenario A			HARP Output, Exposure Scenario B			HARP Output, Exposure Scenario C			Cancer Burden Calculation	
Rec #	Census Tract	Census Block	UTM X (m)	UTM Y (m)	Population [1]	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Residential Cancer Risk Age 3TM-2	Residential Cancer Risk Age 2-16	Residential Cancer Risk Age 16-30	Max Cancer Risk [2]	Cancer Burden [3]
51	6100	1010	483441	3622485	41	2.49E-07	3.08E-07	2.52E-08	3.45E-07	3.00E-07	1.51E-08	4.27E-07	2.86E-07	1.31E-08	7.26E-07	2.98E-05
52	6100	1011	483507	3622534	33	1.89E-07	2.58E-07	2.15E-08	2.94E-07	2.56E-07	1.28E-08	3.64E-07	2.44E-07	1.12E-08	6.19E-07	2.04E-05
53	6100	1013	483510	3622393	36	2.30E-07	2.63E-07	2.12E-08	2.91E-07	2.53E-07	1.27E-08	3.60E-07	2.41E-07	1.10E-08	6.11E-07	2.20E-05
54	6100	1014	483576	3622303	35	2.37E-07	2.57E-07	2.04E-08	2.80E-07	2.44E-07	1.22E-08	3.47E-07	2.32E-07	1.06E-08	5.89E-07	2.06E-05
55	6100	1015	483390	3622310	0	3.27E-07	3.37E-07	2.65E-08	3.64E-07	3.16E-07	1.59E-08	4.50E-07	3.01E-07	1.38E-08	7.65E-07	0.00E+00
56	6100	2000	483366	3622293	0	3.44E-07	3.49E-07	2.74E-08	3.76E-07	3.27E-07	1.64E-08	4.65E-07	3.11E-07	1.43E-08	7.90E-07	0.00E+00
57	6100	2001	483350	3622275	0	3.64E-07	3.65E-07	2.86E-08	3.93E-07	3.41E-07	1.71E-08	4.86E-07	3.25E-07	1.49E-08	8.26E-07	0.00E+00
58	6100	2002	483304	3622246	0	3.92E-07	3.89E-07	3.04E-08	4.16E-07	3.62E-07	1.82E-08	5.15E-07	3.45E-07	1.58E-08	8.76E-07	0.00E+00
59	6100	2003	483249	3622220	0	3.97E-07	3.94E-07	3.08E-08	4.22E-07	3.67E-07	1.84E-08	5.22E-07	3.49E-07	1.60E-08	8.88E-07	0.00E+00
60	6100	2004	483174	3622265	0	4.24E-07	4.22E-07	3.29E-08	4.52E-07	3.93E-07	1.97E-08	5.59E-07	3.74E-07	1.72E-08	9.51E-07	0.00E+00
61	6100	2005	483159	3622235	0	4.21E-07	4.13E-07	3.21E-08	4.41E-07	3.83E-07	1.92E-08	5.45E-07	3.65E-07	1.67E-08	9.27E-07	0.00E+00
62	6100	2006	483475	3621869	0	2.87E-07	2.74E-07	2.12E-08	2.91E-07	2.53E-07	1.27E-08	3.60E-07	2.41E-07	1.11E-08	6.12E-07	0.00E+00
63	6100	2007	483542	3621915	0	2.83E-07	2.70E-07	2.09E-08	2.87E-07	2.49E-07	1.25E-08	3.55E-07	2.37E-07	1.09E-08	6.03E-07	0.00E+00
64	6100	2008	483297	3622100	0	3.61E-07	3.49E-07	2.71E-08	3.72E-07	3.23E-07	1.62E-08	4.60E-07	3.08E-07	1.41E-08	7.82E-07	0.00E+00
65	6100	2009	483236	3622132	0	3.79E-07	3.65E-07	2.83E-08	3.89E-07	3.38E-07	1.70E-08	4.81E-07	3.22E-07	1.48E-08	8.18E-07	0.00E+00
66	6100	2010	483519	3622047	0	2.99E-07	2.87E-07	2.22E-08	3.05E-07	2.65E-07	1.33E-08	3.77E-07	2.52E-07	1.16E-08	6.41E-07	0.00E+00
67	6100	2011	483552	3622045	0	2.84E-07	2.72E-07	2.11E-08	2.89E-07	2.51E-07	1.26E-08	3.58E-07	2.39E-07	1.10E-08	6.08E-07	0.00E+00
68	6100	2012	483596	3622022	0	2.74E-07	2.63E-07	2.03E-08	2.79E-07	2.43E-07	1.22E-08	3.45E-07	2.31E-07	1.06E-08	5.87E-07	0.00E+00
69	6100	2017	483457	3622053	0	3.24E-07	3.10E-07	2.40E-08	3.30E-07	2.87E-07	1.44E-08	4.08E-07	2.73E-07	1.25E-08	6.93E-07	0.00E+00
70	6200	1000	482721	3622500	1	6.62E-07	6.55E-07	5.11E-08	7.00E-07	6.09E-07	3.06E-08	8.67E-07	5.80E-07	2.66E-08	1.47E-06	1.47E-06
71	6200	1002	482158	3621999	0	3.42E-07	2.74E-07	2.02E-08	2.77E-07	2.41E-07	1.21E-08	3.43E-07	2.30E-07	1.05E-08	6.36E-07	0.00E+00
72	6200	1004	482468	3622371	0	6.65E-07	5.52E-07	4.11E-08	5.64E-07	4.91E-07	2.46E-08	6.98E-07	4.67E-07	2.15E-08	1.26E-06	0.00E+00
73	6200	1011	482584	3622344	0	6.14E-07	5.30E-07	3.99E-08	5.48E-07	4.76E-07	2.39E-08	6.78E-07	4.53E-07	2.08E-08	1.18E-06	0.00E+00
74	6200	1038	482157	3622154	0	4.45E-07	3.45E-07	2.52E-08	3.46E-07	3.01E-07	1.51E-08	4.28E-07	2.87E-07	1.32E-08	8.15E-07	0.00E+00
75	6300	1000	481507	3623078	0	1.35E-05	3.97E-06	1.38E-07	1.90E-06	1.65E-06	8.28E-08	2.35E-06	1.57E-06	7.20E-08	1.76E-05	0.00E+00
76	6300	1001	481406	3622971	0	4.99E-06	1.67E-06	7.08E-08	9.72E-07	8.45E-07	4.24E-08	1.20E-06	8.05E-07	3.69E-08	6.73E-06	0.00E+00
77	6300	1002	481701	3623000	0	5.12E-06	2.58E-06	1.56E-07	2.14E-06	1.86E-06	9.36E-08	2.65E-06	1.78E-06	8.15E-08	7.86E-06	0.00E+00
78	6300	1003	481260	3622930	0	1.70E-06	7.63E-07	4.28E-08	5.87E-07	5.10E-07	2.56E-08	7.26E-07	4.86E-07	2.23E-08	2.50E-06	0.00E+00
79	6300	1004	481523	3623017	0	9.01E-06	2.84E-06	1.10E-07	1.51E-06	1.32E-06	6.61E-08	1.87E-06	1.25E-06	5.76E-08	1.20E-05	0.00E+00
80	6300	1005	481213	3622813	0	7.92E-07	4.32E-07	2.73E-08	3.75E-07	3.26E-07	1.64E-08	4.64E-07	3.10E-07	1.42E-08	1.25E-06	0.00E+00
81	6300	1006	481394	3622895	0	2.57E-06	1.02E-06	5.17E-08	7.09E-07	6.17E-07	3.10E-08	8.78E-07	5.87E-07	2.70E-08	3.64E-06	0.00E+00
82	6300	1007	481499	3622882	0	3.07E-06	1.23E-06	6.24E-08	8.56E-07	7.44E-07	3.74E-08	1.06E-06	7.08E-07	3.25E-08	4.36E-06	0.00E+00
83	6300	1008	481517	3622956	0	5.55E-06	1.92E-06	8.50E-08	1.17E-06	1.01E-06	5.09E-08	1.44E-06	9.65E-07	4.43E-08	7.56E-06	0.00E+00
84	6300	1009	481662	3622934	92	4.53E-06	1.95E-06	1.06E-07	1.45E-06	1.26E-06	6.34E-08	1.80E-06	1.20E-06	5.52E-08	6.59E-06	6.06E-04
85	6300	1010	481719	3622780	0	2.17E-06	1.13E-06	6.92E-08	9.49E-07	8.25E-07	4.14E-08	1.17E-06	7.86E-07	3.61E-08	3.36E-06	0.00E+00
86	6300	1011	481816	3622863	0	2.87E-06	1.68E-06	1.10E-07	1.51E-06	1.31E-06	6.60E-08	1.87E-06	1.25E-06	5.74E-08	4.66E-06	0.00E+00
87	6300	1012	481962	3622737	0	1.75E-06	1.18E-06	8.25E-08	1.13E-06	9.83E-07	4.94E-08	1.40E-06	9.37E-07	4.30E-08	3.02E-06	0.00E+00
88	6300	1013	481897	3622779	0	2.06E-06	1.31E-06	8.91E-08	1.22E-06	1.06E-06	5.34E-08	1.51E-06	1.01E-06	4.65E-08	3.46E-06	0.00E+00
89	6300	1014	482334	3622621	0	1.04E-06	9.13E-07	6.92E-08	9.49E-07	8.25E-07	4.14E-08	1.17E-06	7.86E-07	3.61E-08	2.02E-06	0.00E+00
90	6300	1015	482065	3622641	0	1.30E-06	9.32E-07	6.63E-08	9.09E-07	7.90E-07	3.97E-08	1.13E-06	7.53E-07	3.45E-08	2.30E-06	0.00E+00
91	6300	1016	482091	3622513	0	9.49E-07	6.81E-07	4.84E-08	6.64E-07	5.77E-07	2.90E-08	8.22E-07	5.50E-07	2.52E-08	1.68E-06	0.00E+00
92	6300	1017	482026	3622709	0	1.56E-06	1.12E-06	7.92E-08	1.09E-06	9.44E-07	4.74E-08	1.34E-06	9.00E-07	4.13E-08	2.75E-06	0.00E+00
93	6300	1018	481826	3622892	0	3.04E-06	1.89E-06	1.27E-07	1.74E-06	1.51E-06	7.60E-08	2.15E-06	1.44E-06	6.61E-08	5.06E-06	0.00E+00
94	6300	1019	480897	3622734	0	1.68E-07	1.43E-07	1.08E-08	1.47E-07	1.28E-07	6.44E-09	1.83E-07	1.22E-07	5.61E-09	3.22E-07	0.00E+00
95	6300	1023	481006	3622615	0	2.27E-07	1.66E-07	1.19E-08	1.63E-07	1.42E-07	7.14E-09	2.02E-07	1.35E-07	6.21E-09	4.05E-07	0.00E+00
96	6300	1024	481018	3622705	0	2.61E-07	1.93E-07	1.38E-08	1.90E-07	1.65E-07	8.28E-09	2.35E-07	1.57E-07	7.21E-09	4.68E-07	0.00E+00
97	6300	1025	481477	3622623	1227	8.84E-07	4.76E-07	2.99E-08	4.10E-07	3.56E-07	1.79E-08	5.07E-07	3.39E-07	1.56E-08	1.39E-06	1.71E-03
98	6300	1026	481506	3622425	2097	5.32E-07	3.26E-07	2.18E-08	2.99E-07	2.60E-07	1.31E-08	3.70E-07	2.48E-07	1.14E-08	8.80E-07	1.85E-03
99	6300	1027	481117	3622474	0	2.67E-07	1.78E-07	1.23E-08	1.69E-07	1.47E-07	7.38E-09	2.09E-07	1.40E-07	6.42E-09	4.57E-07	0.00E+00
100	6300	1028	480990	3622490	0	1.91E-07	1.39E-07	9.95E-09	1.37E-07	1.19E-07	5.96E-09	1.69E-07	1.13E-07	5.19E-09	3.40E-07	0.00E+00

Table D-A4.5-2 Cancer Burden Calculations, Alternative 5

Rec #	Census Tract	Census Block	UTM X (m)	UTM Y (m)	Population [1]	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario A: Residential Cancer Risk Age 16-30	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario B: Residential Cancer Risk Age 16-30	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 3TM-2	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 2-16	HARP Output, Exposure Scenario C: Residential Cancer Risk Age 16-30	Cancer Burden Calculation: Max Cancer Risk [2]	Cancer Burden Calculation: Cancer Burden [3]
101	6300	1040	481473	3622228	0	3.35E-07	2.26E-07	1.57E-08	2.16E-07	1.88E-07	9.42E-09	2.67E-07	1.79E-07	8.20E-09	5.77E-07	0.00E+00
102	6300	1041	481347	3622138	0	2.29E-07	1.68E-07	1.20E-08	1.65E-07	1.43E-07	7.19E-09	2.04E-07	1.36E-07	6.26E-09	4.09E-07	0.00E+00
103	6300	1042	481997	3622226	0	4.81E-07	3.63E-07	2.63E-08	3.60E-07	3.13E-07	1.57E-08	4.46E-07	2.98E-07	1.37E-08	8.70E-07	0.00E+00
104	6300	1043	482371	3622375	0	6.89E-07	5.51E-07	4.06E-08	5.57E-07	4.84E-07	2.43E-08	6.89E-07	4.61E-07	2.12E-08	1.28E-06	0.00E+00
105	6300	1044	481766	3621972	0	2.77E-07	2.10E-07	1.52E-08	2.08E-07	1.81E-07	9.09E-09	2.58E-07	1.72E-07	7.91E-09	5.02E-07	0.00E+00
106	6500	1012	480774	3623988	0	7.56E-08	1.26E-07	1.08E-08	1.48E-07	1.29E-07	6.47E-09	1.83E-07	1.23E-07	5.63E-09	3.12E-07	0.00E+00
107	6500	1020	480584	3623739	164	7.71E-08	1.04E-07	8.62E-09	1.18E-07	1.03E-07	5.16E-09	1.46E-07	9.79E-08	4.49E-09	2.49E-07	4.08E-05
108	6500	1026	480924	3624158	0	1.42E-07	1.74E-07	1.42E-08	1.94E-07	1.69E-07	8.48E-09	2.40E-07	1.61E-07	7.38E-09	4.09E-07	0.00E+00
109	6500	1027	481013	3624093	9	2.17E-07	2.54E-07	2.06E-08	2.82E-07	2.45E-07	1.23E-08	3.49E-07	2.34E-07	1.07E-08	5.94E-07	5.35E-06
110	6500	1028	480856	3624082	0	1.09E-07	1.58E-07	1.32E-08	1.81E-07	1.58E-07	7.92E-09	2.25E-07	1.50E-07	6.89E-09	3.82E-07	0.00E+00
111	6500	1029	481098	3623877	21	4.14E-07	5.73E-07	4.77E-08	6.54E-07	5.68E-07	2.85E-08	8.09E-07	5.41E-07	2.48E-08	1.38E-06	2.89E-05
112	6500	1030	480967	3624029	0	1.82E-07	2.59E-07	2.17E-08	2.97E-07	2.59E-07	1.30E-08	3.68E-07	2.46E-07	1.13E-08	6.26E-07	0.00E+00
113	6500	1031	481147	3624094	0	3.69E-07	3.77E-07	2.96E-08	4.06E-07	3.53E-07	1.77E-08	5.03E-07	3.36E-07	1.54E-08	8.55E-07	0.00E+00
114	6500	1032	481005	3624291	0	1.71E-07	1.78E-07	1.40E-08	1.93E-07	1.67E-07	8.41E-09	2.38E-07	1.59E-07	7.32E-09	4.05E-07	0.00E+00
115	6500	1033	481229	3623656	32	1.50E-06	1.62E-06	1.28E-07	1.76E-06	1.53E-06	7.69E-08	2.18E-06	1.46E-06	6.69E-08	3.70E-06	1.19E-04
116	6500	1034	481119	3623590	13	7.31E-07	2.22E-06	2.00E-07	2.75E-06	2.39E-06	1.20E-07	3.40E-06	2.27E-06	1.04E-07	5.78E-06	7.51E-05
117	6500	1035	480843	3623829	0	1.00E-07	2.39E-07	2.12E-08	2.91E-07	2.53E-07	1.27E-08	3.61E-07	2.41E-07	1.11E-08	6.13E-07	0.00E+00
118	6500	1036	480862	3623941	2	1.10E-07	2.13E-07	1.85E-08	2.54E-07	2.21E-07	1.11E-08	3.14E-07	2.10E-07	9.65E-09	5.34E-07	1.07E-06
119	6500	1037	480825	3623991	0	9.39E-08	1.60E-07	1.38E-08	1.89E-07	1.64E-07	8.24E-09	2.34E-07	1.56E-07	7.17E-09	3.97E-07	0.00E+00
120	6500	1038	480879	3623512	115	2.05E-07	7.02E-07	6.39E-08	8.76E-07	7.61E-07	3.82E-08	1.08E-06	7.25E-07	3.33E-08	1.84E-06	2.12E-04
121	6500	1039	480805	3623723	0	1.03E-07	2.09E-07	1.82E-08	2.50E-07	2.17E-07	1.09E-08	3.10E-07	2.07E-07	9.50E-09	5.26E-07	0.00E+00
122	6500	1040	481393	3623244	0	3.15E-05	8.52E-06	2.51E-07	3.44E-06	2.99E-06	1.50E-07	4.26E-06	2.85E-06	1.31E-07	4.03E-05	0.00E+00
123	6500	1041	481156	3623361	0	2.29E-06	7.25E-06	6.57E-07	9.02E-06	7.84E-06	3.94E-07	1.12E-05	7.46E-06	3.43E-07	1.90E-05	0.00E+00
124	6500	1042	481534	3623158	2	1.07E-05	4.11E-06	2.03E-07	2.78E-06	2.42E-06	1.21E-07	3.44E-06	2.30E-06	1.06E-07	1.50E-05	3.00E-05
125	6500	1043	481419	3623109	2	2.75E-05	6.64E-06	1.42E-07	1.95E-06	1.69E-06	8.49E-08	2.41E-06	1.61E-06	7.39E-08	3.43E-05	6.86E-05
126	6500	1044	481346	3623082	0	1.80E-05	4.51E-06	1.09E-07	1.49E-06	1.29E-06	6.50E-08	1.84E-06	1.23E-06	5.66E-08	2.26E-05	0.00E+00
127	6500	1047	480910	3623907	0	1.40E-07	2.96E-07	2.60E-08	3.57E-07	3.10E-07	1.56E-08	4.42E-07	2.95E-07	1.36E-08	7.51E-07	0.00E+00
128	6500	1048	480935	3623987	5	1.59E-07	2.62E-07	2.23E-08	3.06E-07	2.66E-07	1.34E-08	3.79E-07	2.54E-07	1.16E-08	6.44E-07	3.22E-06
129	6500	2002	481905	3624352	0	1.53E-07	2.31E-07	1.95E-08	2.68E-07	2.33E-07	1.17E-08	3.31E-07	2.22E-07	1.02E-08	5.63E-07	0.00E+00
130	6500	2003	481574	3624672	0	2.05E-07	2.59E-07	2.13E-08	2.92E-07	2.54E-07	1.27E-08	3.61E-07	2.42E-07	1.11E-08	6.14E-07	0.00E+00
131	6500	2004	481504	3624702	0	2.00E-07	2.45E-07	2.00E-08	2.74E-07	2.39E-07	1.20E-08	3.40E-07	2.27E-07	1.04E-08	5.77E-07	0.00E+00
132	6500	2005	481521	3624643	0	2.18E-07	2.76E-07	2.26E-08	3.11E-07	2.70E-07	1.36E-08	3.84E-07	2.57E-07	1.18E-08	6.53E-07	0.00E+00
133	6500	2006	481266	3624626	0	2.13E-07	2.21E-07	1.74E-08	2.39E-07	2.08E-07	1.04E-08	2.96E-07	1.98E-07	9.09E-09	5.03E-07	0.00E+00
134	6500	2014	481185	3624351	1	2.79E-07	2.90E-07	2.29E-08	3.13E-07	2.72E-07	1.37E-08	3.88E-07	2.60E-07	1.19E-08	6.59E-07	6.59E-07
135	6500	2015	481209	3624520	0	2.33E-07	2.43E-07	1.92E-08	2.63E-07	2.29E-07	1.15E-08	3.26E-07	2.18E-07	1.00E-08	5.53E-07	0.00E+00
136	6500	2016	481334	3624581	0	2.38E-07	2.72E-07	2.19E-08	3.01E-07	2.61E-07	1.31E-08	3.72E-07	2.49E-07	1.14E-08	6.32E-07	0.00E+00
137	6500	2017	481425	3624621	0	2.29E-07	2.77E-07	2.25E-08	3.09E-07	2.69E-07	1.35E-08	3.83E-07	2.56E-07	1.18E-08	6.51E-07	0.00E+00
138	6500	2018	481450	3624517	0	2.59E-07	3.28E-07	2.69E-08	3.69E-07	3.21E-07	1.61E-08	4.57E-07	3.06E-07	1.40E-08	7.77E-07	0.00E+00
139	6500	2024	481311	3624312	0	3.44E-07	4.16E-07	3.38E-08	4.64E-07	4.03E-07	2.02E-08	5.74E-07	3.84E-07	1.76E-08	9.76E-07	0.00E+00
140	6500	2025	481381	3624417	0	2.99E-07	3.72E-07	3.04E-08	4.17E-07	3.63E-07	1.82E-08	5.17E-07	3.46E-07	1.59E-08	8.78E-07	0.00E+00
141	6500	2026	481293	3624482	0	2.66E-07	2.99E-07	2.40E-08	3.29E-07	2.86E-07	1.44E-08	4.07E-07	2.72E-07	1.25E-08	6.92E-07	0.00E+00
142	6500	2027	481475	3623906	71	7.35E-07	1.78E-06	1.58E-07	2.17E-06	1.88E-06	9.46E-08	2.68E-06	1.79E-06	8.24E-08	4.56E-06	3.24E-04
143	6500	2028	481578	3623938	0	5.74E-07	1.17E-06	1.02E-07	1.40E-06	1.22E-06	6.13E-08	1.74E-06	1.16E-06	5.33E-08	2.95E-06	0.00E+00
144	6500	2029	481457	3624015	1	5.90E-07	1.16E-06	1.01E-07	1.38E-06	1.20E-06	6.03E-08	1.71E-06	1.14E-06	5.25E-08	2.90E-06	2.90E-06
145	6500	2030	481536	3624112	0	4.48E-07	7.69E-07	6.60E-08	9.05E-07	7.87E-07	3.95E-08	1.12E-06	7.49E-07	3.44E-08	1.90E-06	0.00E+00
146	6500	2031	481579	3624357	0	3.00E-07	4.34E-07	3.64E-08	4.99E-07	4.34E-07	2.18E-08	6.18E-07	4.13E-07	1.90E-08	1.05E-06	0.00E+00
147	6500	2032	481577	3624540	0	2.39E-07	3.19E-07	2.64E-08	3.62E-07	3.15E-07	1.58E-08	4.49E-07	3.00E-07	1.38E-08	7.62E-07	0.00E+00
148	6500	2033	481759	3624242	18	2.44E-07	3.96E-07	3.37E-08	4.63E-07	4.02E-07	2.02E-08	5.73E-07	3.83E-07	1.76E-08	9.74E-07	1.75E-05
149	6500	2034	481772	3624444	1	1.52E-07	2.27E-07	1.91E-08	2.62E-07	2.28E-07	1.14E-08	3.24E-07	2.17E-07	9.96E-09	5.52E-07	5.52E-07
150	6500	2035	481689	3623733	44	8.06E-07	1.79E-06	1.57E-07	2.16E-06	1.88E-06	9.43E-08	2.67E-06	1.79E-06	8.21E-08	4.54E-06	2.00E-04

Table D-A4.5-2 Cancer Burden Calculations, Alternative 5

						HARP Output, Exposure Scenario A			*HARP Output, Exposure Scenario B*			*HARP Output, Exposure Scenario C*			*Cancer Burden Calculation*	
Rec #	*Census Tract*	*Census Block*	*UTM X (m)*	*UTM Y (m)*	*Population [1]*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Max Cancer Risk [2]*	*Cancer Burden [3]*
151	6500	2036	481753	3623821	7	6.02E-07	1.06E-06	9.09E-08	1.25E-06	1.08E-06	5.44E-08	1.54E-06	1.03E-06	4.74E-08	2.62E-06	1.84E-05
152	6500	2037	481667	3623884	11	5.83E-07	1.10E-06	9.53E-08	1.31E-06	1.14E-06	5.71E-08	1.62E-06	1.08E-06	4.97E-08	2.75E-06	3.03E-05
153	6500	2038	481745	3623991	8	4.12E-07	6.89E-07	5.89E-08	8.07E-07	7.02E-07	3.53E-08	9.99E-07	6.69E-07	3.07E-08	1.70E-06	1.36E-05
154	6500	2039	481775	3623670	0	7.14E-07	1.67E-06	1.48E-07	2.03E-06	1.76E-06	8.86E-08	2.51E-06	1.68E-06	7.72E-08	4.27E-06	0.00E+00
155	6500	2040	481830	3623755	2	5.66E-07	1.02E-06	8.85E-08	1.21E-06	1.05E-06	5.30E-08	1.50E-06	1.00E-06	4.61E-08	2.55E-06	5.10E-06
156	6500	2041	481926	3623721	37	4.33E-07	7.90E-07	6.82E-08	9.36E-07	8.13E-07	4.09E-08	1.16E-06	7.75E-07	3.56E-08	1.97E-06	7.28E-05
157	6500	2042	481890	3623679	9	4.88E-07	1.01E-06	8.84E-08	1.21E-06	1.05E-06	5.29E-08	1.50E-06	1.00E-06	4.61E-08	2.55E-06	2.30E-05
158	6500	2043	482006	3623617	0	3.06E-07	7.06E-07	6.24E-08	8.56E-07	7.44E-07	3.74E-08	1.06E-06	7.09E-07	3.25E-08	1.80E-06	0.00E+00
159	6500	2044	481432	3624258	0	3.81E-07	5.39E-07	4.51E-08	6.18E-07	5.37E-07	2.70E-08	7.65E-07	5.12E-07	2.35E-08	1.30E-06	0.00E+00
160	6500	2045	481934	3623538	6	4.06E-07	1.29E-06	1.17E-07	1.61E-06	1.40E-06	7.02E-08	1.99E-06	1.33E-06	6.11E-08	3.38E-06	2.03E-05
161	6500	2046	481861	3623607	0	5.28E-07	1.40E-06	1.25E-07	1.72E-06	1.50E-06	7.51E-08	2.13E-06	1.42E-06	6.54E-08	3.62E-06	0.00E+00
162	6500	2047	481799	3623522	12	6.69E-07	2.60E-06	2.38E-07	3.27E-06	2.84E-06	1.43E-07	4.05E-06	2.71E-06	1.24E-07	6.88E-06	8.25E-05
163	6500	2048	481715	3623564	27	9.61E-07	3.59E-06	3.28E-07	4.50E-06	3.91E-06	1.96E-07	5.57E-06	3.73E-06	1.71E-07	9.46E-06	2.56E-04
164	6500	2049	481722	3624169	62	3.06E-07	5.19E-07	4.44E-08	6.10E-07	5.30E-07	2.66E-08	7.54E-07	5.05E-07	2.32E-08	1.28E-06	7.95E-05
165	6500	2050	481113	3624288	5	2.54E-07	2.56E-07	2.01E-08	2.75E-07	2.39E-07	1.20E-08	3.41E-07	2.28E-07	1.05E-08	5.79E-07	2.90E-06
166	6500	2051	481157	3624151	0	3.48E-07	3.57E-07	2.81E-08	3.85E-07	3.35E-07	1.68E-08	4.77E-07	3.19E-07	1.46E-08	8.10E-07	0.00E+00
167	6500	2052	481261	3624095	2	4.86E-07	6.17E-07	5.06E-08	6.94E-07	6.04E-07	3.03E-08	8.59E-07	5.75E-07	2.64E-08	1.46E-06	2.92E-06
168	6500	2053	482146	3623236	40	3.80E-07	1.27E-06	1.16E-07	1.59E-06	1.38E-06	6.94E-08	1.97E-06	1.32E-06	6.04E-08	3.34E-06	1.34E-04
169	6500	2054	482160	3623417	357	2.02E-07	6.22E-07	5.62E-08	7.71E-07	6.70E-07	3.37E-08	9.54E-07	6.39E-07	2.93E-08	1.62E-06	5.79E-04
170	6500	2055	482043	3623486	31	2.90E-07	9.19E-07	8.33E-08	1.14E-06	9.93E-07	4.99E-08	1.41E-06	9.46E-07	4.34E-08	2.40E-06	7.45E-05
171	6500	2056	481974	3623407	1	3.91E-07	1.65E-06	1.52E-07	2.09E-06	1.81E-06	9.12E-08	2.58E-06	1.73E-06	7.94E-08	4.39E-06	4.39E-06
172	6500	2057	481884	3623458	7	4.96E-07	2.15E-06	1.98E-07	2.71E-06	2.36E-06	1.18E-07	3.36E-06	2.25E-06	1.03E-07	5.70E-06	3.99E-05
173	6500	2058	482371	3623192	38	2.30E-07	6.22E-07	5.57E-08	7.64E-07	6.64E-07	3.34E-08	9.45E-07	6.33E-07	2.90E-08	1.61E-06	6.11E-05
174	6500	2059	481151	3624119	0	3.60E-07	3.67E-07	2.89E-08	3.96E-07	3.44E-07	1.73E-08	4.90E-07	3.28E-07	1.50E-08	8.33E-07	0.00E+00
175	6500	3000	481234	3624040	0	5.18E-07	6.28E-07	5.12E-08	7.02E-07	6.10E-07	3.06E-08	8.68E-07	5.81E-07	2.67E-08	1.48E-06	0.00E+00
176	6500	3001	481282	3623976	0	6.48E-07	1.12E-06	9.63E-08	1.32E-06	1.15E-06	5.76E-08	1.63E-06	1.09E-06	5.02E-08	2.78E-06	0.00E+00
177	6500	3002	481249	3623924	0	6.97E-07	1.05E-06	8.88E-08	1.22E-06	1.06E-06	5.32E-08	1.51E-06	1.01E-06	4.63E-08	2.56E-06	0.00E+00
178	6500	3003	481398	3623623	0	2.18E-06	8.35E-06	7.65E-07	1.05E-05	9.12E-06	4.58E-07	1.30E-05	8.69E-06	3.99E-07	2.21E-05	0.00E+00
179	6500	3004	481514	3623697	0	1.29E-06	6.65E-06	6.17E-07	8.47E-06	7.36E-06	3.70E-07	1.05E-05	7.01E-06	3.22E-07	1.78E-05	0.00E+00
180	6500	3005	481516	3623735	0	1.04E-06	4.04E-06	3.70E-07	5.07E-06	4.41E-06	2.22E-07	6.28E-06	4.20E-06	1.93E-07	1.07E-05	0.00E+00
181	6500	3006	481755	3623445	0	8.56E-07	5.05E-06	4.71E-07	6.46E-06	5.61E-06	2.82E-07	7.99E-06	5.35E-06	2.45E-07	1.36E-05	0.00E+00
182	6500	3007	481817	3623312	0	8.63E-07	6.27E-06	5.89E-07	8.07E-06	7.02E-06	3.53E-07	9.99E-06	6.69E-06	3.07E-07	1.70E-05	0.00E+00
183	6500	3008	481679	3623267	0	2.23E-06	1.03E-05	9.50E-07	1.30E-05	1.13E-05	5.69E-07	1.61E-05	1.08E-05	4.95E-07	2.74E-05	0.00E+00
184	6500	3009	481855	3623013	0	3.04E-06	3.99E-06	3.30E-07	4.52E-06	3.93E-06	1.97E-07	5.59E-06	3.74E-06	1.72E-07	9.51E-06	0.00E+00
185	6500	3010	481427	3623333	0	1.09E-05	5.09E-06	2.92E-07	4.01E-06	3.49E-06	1.75E-07	4.96E-06	3.32E-06	1.52E-07	1.63E-05	0.00E+00
186	6500	3011	481930	3622970	0	2.52E-06	3.16E-06	2.59E-07	3.55E-06	3.09E-06	1.55E-07	4.40E-06	2.94E-06	1.35E-07	7.47E-06	0.00E+00
187	6500	3012	481936	3622930	0	2.52E-06	2.49E-06	1.94E-07	2.66E-06	2.32E-06	1.16E-07	3.30E-06	2.21E-06	1.01E-07	5.60E-06	0.00E+00
188	6500	3013	481842	3622985	0	3.25E-06	3.05E-06	2.35E-07	3.22E-06	2.80E-06	1.41E-07	3.99E-06	2.67E-06	1.22E-07	6.78E-06	0.00E+00
189	6500	3014	482069	3623076	0	1.22E-06	3.37E-06	3.02E-07	4.14E-06	3.60E-06	1.81E-07	5.13E-06	3.43E-06	1.58E-07	8.72E-06	0.00E+00
190	6500	3015	482186	3623017	0	1.06E-06	2.23E-06	1.96E-07	2.69E-06	2.34E-06	1.17E-07	3.33E-06	2.23E-06	1.02E-07	5.65E-06	0.00E+00
191	6500	3016	482325	3622935	0	9.30E-07	1.57E-06	1.34E-07	1.84E-06	1.60E-06	8.04E-08	2.28E-06	1.53E-06	7.00E-08	3.87E-06	0.00E+00
192	6500	3017	482167	3623111	0	7.32E-07	1.98E-06	1.77E-07	2.43E-06	2.12E-06	1.06E-07	3.01E-06	2.02E-06	9.25E-08	5.12E-06	0.00E+00
193	6500	3018	481950	3623245	0	7.96E-07	3.86E-06	3.58E-07	4.91E-06	4.27E-06	2.14E-07	6.07E-06	4.06E-06	1.86E-07	1.03E-05	0.00E+00
194	6500	3019	482129	3623190	0	5.50E-07	1.79E-06	1.62E-07	2.23E-06	1.94E-06	9.72E-08	2.76E-06	1.84E-06	8.46E-08	4.68E-06	0.00E+00
195	6500	3020	482303	3622832	0	1.17E-06	1.46E-06	1.20E-07	1.64E-06	1.43E-06	7.16E-08	2.03E-06	1.36E-06	6.24E-08	3.45E-06	0.00E+00
196	6500	3021	481994	3622998	209	1.99E-06	3.74E-06	3.24E-07	4.44E-06	3.86E-06	1.94E-07	5.50E-06	3.68E-06	1.69E-07	9.34E-06	1.95E-03
197	6500	3022	482508	3622723	0	8.75E-07	1.01E-06	8.11E-08	1.11E-06	9.67E-07	4.86E-08	1.38E-06	9.22E-07	4.23E-08	2.34E-06	0.00E+00
198	6500	3023	482202	3622889	0	1.37E-06	1.86E-06	1.54E-07	2.11E-06	1.84E-06	9.23E-08	2.62E-06	1.75E-06	8.04E-08	4.45E-06	0.00E+00
199	6500	3024	482406	3622775	0	1.01E-06	1.19E-06	9.67E-08	1.33E-06	1.15E-06	5.79E-08	1.64E-06	1.10E-06	5.04E-08	2.79E-06	0.00E+00
200	6500	3025	482105	3622947	0	1.60E-06	2.50E-06	2.12E-07	2.91E-06	2.53E-06	1.27E-07	3.60E-06	2.41E-06	1.10E-07	6.11E-06	0.00E+00

Table D-A4.5-2 Cancer Burden Calculations, Alternative 5

						HARP Output, Exposure Scenario A			*HARP Output, Exposure Scenario B*			*HARP Output, Exposure Scenario C*			*Cancer Burden Calculation*	
Rec #	*Census Tract*	*Census Block*	*UTM X (m)*	*UTM Y (m)*	*Population* [(1)]	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Residential Cancer Risk Age 3TM-2*	*Residential Cancer Risk Age 2-16*	*Residential Cancer Risk Age 16-30*	*Max Cancer Risk* [(2)]	*Cancer Burden* [(3)]
201	6500	3026	481878	3623044	0	2.64E-06	5.88E-06	5.19E-07	7.12E-06	6.19E-06	3.11E-07	8.81E-06	5.89E-06	2.70E-07	1.50E-05	0.00E+00
202	6500	3027	482880	3622477	0	5.69E-07	5.87E-07	4.63E-08	6.35E-07	5.52E-07	2.77E-08	7.85E-07	5.25E-07	2.41E-08	1.33E-06	0.00E+00
203	6500	3028	482954	3622485	0	5.43E-07	5.69E-07	4.50E-08	6.17E-07	5.36E-07	2.69E-08	7.63E-07	5.11E-07	2.34E-08	1.30E-06	0.00E+00
204	6500	3029	482660	3622655	1	7.22E-07	8.15E-07	6.55E-08	8.98E-07	7.81E-07	3.92E-08	1.11E-06	7.44E-07	3.41E-08	1.89E-06	1.89E-06
205	6500	3030	482654	3622747	0	6.77E-07	8.82E-07	7.27E-08	9.97E-07	8.67E-07	4.35E-08	1.23E-06	8.26E-07	3.79E-08	2.10E-06	0.00E+00
206	6500	3031	482441	3622868	0	8.31E-07	1.24E-06	1.05E-07	1.44E-06	1.25E-06	6.27E-08	1.78E-06	1.19E-06	5.46E-08	3.02E-06	0.00E+00
207	6500	3032	482479	3622938	3	5.89E-07	1.07E-06	9.24E-08	1.27E-06	1.10E-06	5.53E-08	1.57E-06	1.05E-06	4.82E-08	2.67E-06	8.00E-06
208	6500	3033	482360	3623004	0	6.33E-07	1.30E-06	1.14E-07	1.57E-06	1.36E-06	6.84E-08	1.94E-06	1.30E-06	5.95E-08	3.29E-06	0.00E+00
209	6500	3034	482467	3623004	0	4.45E-07	9.27E-07	8.12E-08	1.11E-06	9.68E-07	4.86E-08	1.38E-06	9.22E-07	4.23E-08	2.34E-06	0.00E+00
210	6500	3035	482487	3623042	0	3.64E-07	8.09E-07	7.14E-08	9.79E-07	8.51E-07	4.28E-08	1.21E-06	8.11E-07	3.72E-08	2.06E-06	0.00E+00
211	6500	3036	482551	3623087	118	2.43E-07	5.62E-07	4.97E-08	6.81E-07	5.92E-07	2.97E-08	8.43E-07	5.64E-07	2.59E-08	1.43E-06	1.69E-04
212	6500	3037	482732	3623046	191	2.09E-07	4.50E-07	3.95E-08	5.42E-07	4.71E-07	2.37E-08	6.71E-07	4.49E-07	2.06E-08	1.14E-06	2.18E-04
213	6500	3038	482795	3622861	9	3.54E-07	6.15E-07	5.29E-08	7.25E-07	6.30E-07	3.17E-08	8.97E-07	6.00E-07	2.76E-08	1.53E-06	1.37E-05
214	6500	3039	482634	3622961	0	3.77E-07	7.47E-07	6.51E-08	8.93E-07	7.77E-07	3.90E-08	1.11E-06	7.40E-07	3.40E-08	1.88E-06	0.00E+00
215	6500	3040	482740	3622849	0	4.02E-07	6.68E-07	5.70E-08	7.82E-07	6.80E-07	3.42E-08	9.68E-07	6.48E-07	2.97E-08	1.65E-06	0.00E+00
216	6500	3041	482701	3622814	0	5.34E-07	8.09E-07	6.82E-08	9.36E-07	8.14E-07	4.09E-08	1.16E-06	7.75E-07	3.56E-08	1.97E-06	0.00E+00
217	6500	3042	482951	3622679	0	4.35E-07	5.74E-07	4.75E-08	6.51E-07	5.66E-07	2.84E-08	8.06E-07	5.39E-07	2.47E-08	1.37E-06	0.00E+00
218	6500	3043	482946	3622718	0	3.92E-07	5.55E-07	4.63E-08	6.36E-07	5.53E-07	2.78E-08	7.87E-07	5.26E-07	2.42E-08	1.34E-06	0.00E+00
219	6500	3044	483139	3622538	0	4.26E-07	5.00E-07	4.05E-08	5.55E-07	4.82E-07	2.42E-08	6.87E-07	4.60E-07	2.11E-08	1.17E-06	0.00E+00
220	6500	3045	483027	3622601	0	4.57E-07	5.55E-07	4.52E-08	6.19E-07	5.38E-07	2.70E-08	7.66E-07	5.13E-07	2.35E-08	1.30E-06	0.00E+00
221	6500	3046	482860	3622638	0	5.64E-07	6.69E-07	5.42E-08	7.43E-07	6.46E-07	3.25E-08	9.20E-07	6.16E-07	2.83E-08	1.56E-06	0.00E+00
222	6500	3047	483000	3622534	0	5.12E-07	5.69E-07	4.55E-08	6.25E-07	5.43E-07	2.73E-08	7.73E-07	5.17E-07	2.37E-08	1.31E-06	0.00E+00
223	6500	3048	483023	3622575	0	4.81E-07	5.65E-07	4.57E-08	6.27E-07	5.45E-07	2.74E-08	7.76E-07	5.19E-07	2.38E-08	1.32E-06	0.00E+00
224	6500	3049	483096	3622513	9	4.65E-07	5.24E-07	4.20E-08	5.77E-07	5.01E-07	2.52E-08	7.14E-07	4.78E-07	2.19E-08	1.21E-06	1.09E-05
225	6500	3050	483166	3622430	0	4.48E-07	4.80E-07	3.82E-08	5.23E-07	4.55E-07	2.28E-08	6.48E-07	4.33E-07	1.99E-08	1.10E-06	0.00E+00
226	6500	3051	482825	3622908	37	2.84E-07	5.35E-07	4.64E-08	6.37E-07	5.53E-07	2.78E-08	7.88E-07	5.27E-07	2.42E-08	1.34E-06	4.95E-05
227	6500	3052	482897	3622942	86	1.99E-07	3.88E-07	3.37E-08	4.63E-07	4.02E-07	2.02E-08	5.73E-07	3.83E-07	1.76E-08	9.74E-07	8.37E-05
228	6500	3053	482937	3622854	7	2.71E-07	4.87E-07	4.20E-08	5.76E-07	5.00E-07	2.51E-08	7.12E-07	4.77E-07	2.19E-08	1.21E-06	8.48E-06
229	6500	3054	482989	3622385	0	5.06E-07	5.09E-07	3.99E-08	5.47E-07	4.75E-07	2.39E-08	6.77E-07	4.53E-07	2.08E-08	1.15E-06	0.00E+00
230	6600	1000	480860	3623209	289	2.99E-07	2.61E-07	1.97E-08	2.70E-07	2.35E-07	1.18E-08	3.35E-07	2.24E-07	1.03E-08	5.80E-07	1.68E-04
231	6600	1013	480715	3622950	241	1.54E-07	1.20E-07	8.78E-09	1.20E-07	1.05E-07	5.26E-09	1.49E-07	9.97E-08	4.58E-09	2.83E-07	6.83E-05
232	6600	1014	480797	3622986	177	1.99E-07	1.53E-07	1.11E-08	1.52E-07	1.33E-07	6.66E-09	1.89E-07	1.26E-07	5.79E-09	3.63E-07	6.42E-05
233	6600	1015	480889	3622963	110	2.57E-07	1.93E-07	1.39E-08	1.91E-07	1.66E-07	8.33E-09	2.36E-07	1.58E-07	7.25E-09	4.64E-07	5.10E-05
234	6802	1000	480600	3623515	7	1.16E-07	1.33E-07	1.07E-08	1.47E-07	1.28E-07	6.43E-09	1.82E-07	1.22E-07	5.60E-09	3.10E-07	2.17E-06
235	8902	1014	481508	3624720	0	1.94E-07	2.38E-07	1.94E-08	2.66E-07	2.31E-07	1.16E-08	3.29E-07	2.20E-07	1.01E-08	5.60E-07	0.00E+00
Total																**1.13E-02**

Legend : Rec = receptor; UTM = universe transverse mercator coordinates; m = meter; HARP = hot spots analysis & reporting program; 3TM = third trimester before birth.

Notes : [(1)]Population data are provided by HARP and are from the 2010 U.S. Census.

[(2)]The 70-year cancer risk is the same as the 30-year cancer risk because the construction period would fit entirely within the 30-year residential exposure period.

[(3)]Cancer burden = population x cancer risk.

Appendix E
Transportation Impact Assessment

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TRANSPORTATION IMPACT ANALYSIS
DRAFT

NAVY OLD TOWN CAMPUS REVITALIZATION

San Diego, California
September 22, 2020

LLG Ref. 3-19-3171

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EXECUTIVE SUMMARY

Linscott, Law & Greenspan, Engineers (LLG) has prepared the following Transportation Impact Analysis associated with the Navy Revitalization Old Town Campus (OTC) Propose Action alternatives (hereby referred to as the "Proposed Action" or "Proposed Action alternatives"). NAVWAR proposes to revitalize NAVBASE Point Loma's OTC, which would include the construction of buildings, utilities, and infrastructure to provide mission capable facilities for NAVWAR and other tenant commands on OTC. Revitalization efforts could include Navy recapitalization of the site or redevelopment through a public-private partnership.

The Proposed Action is located north of downtown San Diego and south of Old Town San Diego, approximately 1/2-mile north of San Diego International Airport. The neighborhood of Mission Hills is located to the east and the Midway District and Liberty Station is located to the west. The Old Town Transit Center, an intermodal transportation station providing local bus and trolley service, commuter rail service, and regional rail service, is located approximately 400 feet north of the site. OTC comprises two sites totaling 70.5 acres: OTC Site 1 is 48.7 acres and OTC Site 2 is 21.8 acres. OTC Site 1 is bordered by Pacific Highway to the west, Interstate 5 to the north and east, a railroad right-of-way to the east, and Barnett Avenue to the south. OTC Site 2 is adjacent to OTC Site 1 to the west. OTC Site 2 is bordered by Midway Drive to the west, Rosecrans Street to the North, Pacific Highway to the east, and Barnett Avenue to the south.

The Proposed Action would revitalize OTC through demolition and construction of buildings, utilities, and infrastructure to provide secure, safe, modern state-of-the-art facilities to meet NAVWAR's operational mission. The revitalization of OTC may be accomplished through Navy recapitalization or a number of public-private development scenarios. Through the alternative development process, five action alternatives were identified that meet the purpose and need for the Proposed Action. One action alternative analyzes recapitalization of OTC with Navy funds, and four action alternatives analyze revitalization of OTC with various densities in collaboration with a private developer.

In addition to the No Action alternative, the following five action alternatives were analyzed in this report:

- Alternative 1: Navy Recapitalization at OTC
- Alternative 2: Higher-density Mixed-use Revitalization
- Alternative 3: Lower-density Mixed-use Revitalization
- Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center
- Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center

LLG, Engineers has prepared this Transportation Impact Analysis as part of the planning process complying with both the National Environmental Protection Act (NEPA) and the local California Environmental Quality Act (CEQA). This report analyzes the impacts from the Proposed Action alternatives based on Level of Service and Vehicle Miles Traveled (VMT), pursuant to California Senate Bill (SB) 743.

For the cumulative impact analysis presented in this report, the Year 2050 analysis represents the cumulative condition when the Proposed Action alternatives would be fully operational over the buildout ambient traffic conditions. Direct impacts from the Proposed Action alternatives were evaluated assuming the most intensive development that would be expected to occur within a 10-year timeframe, by Year 2030.

Using City of San Diego trip generation rates, the vehicular traffic expected to be generated by each Proposed Action alternative is shown in ***Table ES–1***:

TABLE ES–1
TRIP GENERATION SUMMARY

Proposed Action Alternative	**ADT**	**AM Peak Hour**			**PM Peak Hour**		
		In	Out	Total	In	Out	Total
Alternative 1	800	65	7	72	8	72	80
Alternative 2	51,946	1,583	2,472	4,055	2,909	2,150	5,059
Alternative 3	34,592	1,044	1,648	2,692	1,959	1,429	3,388
Alternative 4	70,022	1,904	3,253	5,157	3,786	2,690	6,476
Alternative 5	55,309	1,406	2,610	4,016	3,039	2,031	5,070
Year 2030 Alternative 2 (25%) *(worst-case highest intensity development)*	11,951	338	612	950	732	461	1,193

General Notes:

1. *Section 7.1* of this report provides the land use quantities, trip generation rates, and complete trip generation calculations for each Proposed Action alternative.
2. For the Year 2030 analysis, 25% of Alternative 2 was assumed.

The Year 2050 conditions represent a future baseline with the effects of cumulative development over the existing on-the-ground conditions without development of the Proposed Action alternative. This condition is considered the Year 2050 No-Action Alternative as it assumed the existing NAVWAR operations would continue into the future and is used to measure the Proposed Action's cumulative impacts. The Year 2050 No-Action Alternative parameters were developed over several months through the coordination of WSP Global Inc. and SANDAG. Several outside influencing factors were considered for inclusion in the forecast Year 2050. WSP and SANDAG worked with local agencies and reviewed individual cumulative development projects, Community Plans, Specific Plans, Master Plans, and Development Plans for the surrounding area.

An interim near-term condition is analyzed in this report to evaluate direct impacts. The Year 2030 assumes the most intense land use development and resulting trip generation (without the transit center) that could partially develop within a 10-year timeframe.

Intersections, street segments, freeway segments, and ramp meters were analyzed for the auto delay/level of service (LOS) analysis contained in this report. All locations were analyzed under the following 10 scenarios:

- Existing (Year 2020)
- Year 2050 No-Action Alternative
- Year 2050 with No-Action Alternative including an Automated Passenger Mover
- Year 2050 with Alternative 1: Navy Recapitalization at OTC
- Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization
- Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization
- Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center
- Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center
- Near-Term Year 2030
- Near-Term with Year 2030 Alternative 2: Higher-density Mixed-use Revitalization (25%) – *representing the worst-case highest intensity development to occur in a 10-year timeframe*

The auto delay/LOS analysis performed for the above scenarios results in significant impacts at study area locations. ***Table ES–2*** at the end of this summary provides a list of the impacted locations.

An analysis of the active transportation modes is provided in this report to evaluate the non-vehicular modes of transportation around the OTC site. Under Alternatives 4 and 5, the Old Town Transit Center is relocated to within the OTC. Various improvements to pedestrian, bicycle and transit modes are recommended. ***Table ES–3*** at the end of this summary provides a list of the recommended active transportation improvements.

A VMT analysis was also conducted consistent with the California Governor's Office of Planning and Research (OPR) guidelines to implement California State Law SB 743. At the time this report was prepared, the City of San Diego was in the process of developing their draft guidelines for VMT. The VMT analysis provided in this report concludes no significant VMT impacts would occur with development of the Proposed Action alternatives.

Preparation of a Transportation Demand Management (TDM) Plan and participation in the implementation of Transportation Systems Management (TSM) measures are proposed in this report as partial mitigation at locations with significant and unavoidable impacts.

Table ES–2
Significant Impact Summary

Location	Jurisdiction	Year 2050 Cumulative Impacts										Year 2030 Direct Impacts	
		Alternative 1	Mitigated? (Y/N)	Alternative 2	Mitigated? (Y/N)	Alternative 3	Mitigated? (Y/N)	Alternative 4	Mitigated? (Y/N)	Alternative 5	Mitigated? (Y/N)	Alternative 2 (25%)	Mitigated? (Y/N)
INTERSECTIONS													
1. Taylor St/ Hotel Circle South	San Diego							—					
2. Taylor St/ I-8 EB Ramps	San Diego	—	—	Alt 2-I-1	No	—	—	Alt 4-I-1	No	Alt 5-I-1	No	—	—
3. Taylor St/ Morena Blvd/Whitman St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
4. Taylor St/ Juan St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
5. Congress St/ Taylor St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
6. Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Alt 1-I-1	Yes	Alt 2-I-2	Yes	Alt 3-I-1	Yes	Alt 4-I-2	Yes	Alt 5-I-2	Yes	2030 Alt 2-I-1	Yes
7. Rosecrans St/ Jefferson St	San Diego	—	—	Alt 2-I-3	No	Alt 3-I-2	No	Alt 4-I-3	No	Alt 5-I-3	No	2030 Alt 2-I-2	No
8. Camino Del Rio W/ Hancock St	San Diego	—	—	Alt 2-I-4	Yes	Alt 3-I-3	Yes	Alt 4-I-4	Yes	Alt 5-I-4	Yes	—	—
9. Camino Del Rio W/ Kurtz St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
10. Rosecrans St/ Kurtz St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	San Diego	—	—	Alt 2-I-5	No	Alt 3-I-4	No	Alt 4-I-5	No	Alt 5-I-5	No	—	—
12. Rosecrans St/ Midway Dr	San Diego	—	—	Alt 2-I-6	No	Alt 3-I-5	No	Alt 4-I-6	No	Alt 5-I-6	No	—	—
13. Rosecrans St/ Lytton St	San Diego	—	—	Alt 2-I-7	Yes	Alt 3-I-6	Yes	Alt 4-I-7	Yes	Alt 5-I-7	Yes	2030 Alt 2-I-3	Yes
14. Truxtun Rd/ Lytton St/Barnett Ave	San Diego	—	—	Alt 2-I-8	Yes	Alt 3-I-7	Yes	Alt 4-I-8	Yes	Alt 5-I-8	Yes	2030 Alt 2-I-4	Yes
15. Midway Dr/ Enterprise St	San Diego	—	—	Alt 2-I-9	No	Alt 3-I-8	No	Alt 4-I-9	No	Alt 5-I-9	No	—	—
16. Barnett Ave/ Midway Dr	San Diego	—	—	Alt 2-I-10	No	—	—	Alt 4-I-10	No	Alt 5-I-10	No	—	—
17. Pacific Hwy/ Telegraph Pl	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
18. Pacific Hwy/ Kurtz St	San Diego	Alt 1-I-2	Yes	Alt 2-I-11	No	Alt 3-I-9	No	Alt 4-I-11	No	Alt 5-I-11	No	2030 Alt 2-I-5	No
19. Sports Arena Blvd/ Pacific Hwy	San Diego	Alt 1-I-3	Yes	Alt 2-I-12	Yes	Alt 3-I-10	Yes	Alt 4-I-12	Yes	Alt 5-I-12	Yes	2030 Alt 2-I-6	Yes
20. Pacific Hwy/ Enterprise St	San Diego	Alt 1-I-4	No	Alt 2-I-13	No	Alt 3-I-11	No	Alt 4-I-13	No	Alt 5-I-13	No	2030 Alt 2-I-7	No
21. Pacific Hwy/ Barnett Ave	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
22. Old Town Ave/ San Diego Ave	San Diego	—	—	Alt 2-I-14	No	Alt 3-I-12	No	Alt 4-I-14	No	Alt 5-I-14	No	2030 Alt 2-I-8	No
23. Old Town Ave/ Moore St	San Diego	Alt 1-I-5	No	Alt 2-I-15	Yes	Alt 3-I-13	Yes	Alt 4-I-15	Yes	Alt 5-I-15	Yes	2030 Alt 2-I-9	Yes
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	San Diego	Alt 1-I-6	No	Alt 2-I-16	Yes	Alt 3-I-14	Yes	Alt 4-I-16	Yes	Alt 5-I-16	Yes	2030 Alt 2-I-10	Yes
25. Witherby St/ Hancock St	San Diego	Alt 1-I-7	Yes	Alt 2-I-17	Yes	Alt 3-I-15	Yes	Alt 4-I-17	Yes	Alt 5-I-17	Yes	2030 Alt 2-I-11	Yes
26. Witherby St/ Pacific Hwy	San Diego	Alt 1-I-8	No	Alt 2-I-18	Yes	Alt 3-I-16	Yes	Alt 4-I-18	Yes	Alt 5-I-18	Yes	—	—
27. Tripoli Ave/ Witherby St	San Diego	—	—	Alt 2-I-19	Yes	Alt 3-I-17	Yes	Alt 4-I-19	Yes	Alt 5-I-19	Yes	—	—
28. Noell St/ Hancock St	San Diego	—	—	Alt 2-I-20	Yes	Alt 3-I-18	Yes	Alt 4-I-20	Yes	Alt 5-I-20	Yes	—	—
29. Washington St/ San Diego Ave	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
30. Washington St/ Hancock St	San Diego	—	—	Alt 2-I-21	Yes	Alt 3-I-19	Yes	Alt 4-I-21	Yes	Alt 5-I-21	Yes	—	—
31. Washington St/ Pacific Hwy (N)	San Diego	—	—	—	—	—	—	Alt 4-I-22	Yes	Alt 5-I-22	Yes	—	—
32. Washington St/ Pacific Hwy (S)	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
33. Pacific Hwy/ Sassafras St	San Diego	—	—	Alt 2-I-22	No	Alt 3-I-20	No	Alt 4-I-23	No	Alt 5-I-23	No	2030 Alt 2-I-12	No

(Continued on Next Page)

TABLE ES–2
SIGNIFICANT IMPACT SUMMARY

Location	Jurisdiction	Year 2050 Cumulative Impacts										Year 2030 Direct Impacts	
		Alternative 1	Mitigated? (Y/N)	Alternative 2	Mitigated? (Y/N)	Alternative 3	Mitigated? (Y/N)	Alternative 4	Mitigated? (Y/N)	Alternative 5	Mitigated? (Y/N)	Alternative 2 (25%)	Mitigated? (Y/N)
(Continued from Previous Page)													
34. Pacific Hwy / Laurel St	San Diego	—	—	Alt 2-I-23	No	Alt 3-I-21	No	Alt 4-I-24	No	Alt 5-I-24	No	—	—
35. Harbor Dr / Laurel St	San Diego	—	—	Alt 2-I-24	Yes	Alt 3-I-22	Yes	Alt 4-I-25	Yes	Alt 5-I-25	Yes	—	—
36. Pacific Hwy / Sea World Dr	San Diego	—	—	Alt 2-I-25	Yes	Alt 3-I-23	Yes	Alt 4-I-26	Yes	Alt 5-I-26	Yes	2030 Alt 2-I-13	Yes
37. Sea World Dr / I-5 SB Ramps	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
38. Sea World Dr / I-5 NB Ramps	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
39. Morena Blvd / Linda Vista Rd	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
STREET SEGMENTS													
Rosecrans Street													
1. Dewey Rd to Lytton St	San Diego	—	—	Alt 2-S-1	Yes	Alt 3-S-1	Yes	Alt 4-S-1	Yes	Alt 5-S-1	Yes	2030 Alt 2-S-1	Yes
2. Lytton St to Midway Dr	San Diego	—	—	Alt 2-S-2	Yes	Alt 3-S-2	Yes	Alt 4-S-2	Yes	Alt 5-S-2	Yes	2030 Alt 2-S-2	Yes
3. Midway Dr to Sports Arena Blvd	San Diego	—	—	Alt 2-S-3	Yes	Alt 3-S-3	Yes	Alt 4-S-3	Yes	Alt 5-S-3	Yes	2030 Alt 2-S-3	Yes
4. Sports Arena Blvd to Kurtz St	San Diego	—	—	Alt 2-S-4	Yes	Alt 3-S-4	Yes	Alt 4-S-4	Yes	Alt 5-S-4	Yes	2030 Alt 2-S-4	Yes
5. E: Kurtz St to Pacific Hwy	San Diego	—	—	Alt 2-S-5	Yes	Alt 3-S-5	Yes	Alt 4-S-5	Yes	Alt 5-S-5	Yes	—	—
Taylor Street													
6. Pacific Hwy to Congress St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
7. Congress St to Juan St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
8. Juan St to Presidio Dr	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
9. Presidio Dr to I-8 East Ramp	San Diego	—	—	Alt 2-S-6	No	Alt 3-S-6	No	Alt 4-S-6	No	Alt 5-S-6	No	2030 Alt 2-S-5	No
Hotel Circle S.													
10. I-8 East Ramp to Bachman Pl	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
Pacific Highway													
11. SeaWorld Dr to Taylor St	San Diego	—	—	Alt 2-S-7	Yes	Alt 3-S-7	Yes	Alt 4-S-7	Yes	Alt 5-S-7	Yes	—	—
12. Taylor St to Kurtz St	San Diego	—	—									—	—
13. Kurtz St to Sports Arena Blvd	San Diego	—	—	Alt 2-S-8	No	Alt 3-S-8	No	Alt 4-S-8	No	Alt 5-S-8	No	—	—
14. Sports Arena Blvd to Barnett Ave	San Diego	—	—	Alt 2-S-9	No	Alt 3-S-9	No	Alt 4-S-9	No	Alt 5-S-9	No	—	—
15. Barnett Ave to Witherby St	San Diego	—	—	Alt 2-S-10	Yes	Alt 3-S-10	Yes	Alt 4-S-10	Yes	Alt 5-S-10	Yes	2030 Alt 2-S-6	No
16. Witherby St to W. Washington St	San Diego	—	—	Alt 2-S-11	Yes	Alt 3-S-11	Yes	Alt 4-S-11	Yes	Alt 5-S-11	Yes	2030 Alt 2-S-7	No
17. W. Washington St to Sassafras St	San Diego	—	—	Alt 2-S-12	No	Alt 3-S-12	No	Alt 4-S-12	No	Alt 5-S-12	No	—	—
18. Sassafras St to W. Laurel St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
Morena Boulevard													
19. Friars Rd to I-8	San Diego	—	—	Alt 2-S-13	No	Alt 3-S-13	No	Alt 4-S-13	No	Alt 5-S-13	No	—	—
Linda Vista Road													
20. Morena Blvd to Colusa St	San Diego			Alt 2-S-14	Yes	Alt 3-S-14	Yes	Alt 4-S-14	Yes	Alt 5-S-14	Yes		
Kurtz **Street**													
21. Rosecrans to Pacific Hwy	San Diego	—	—	Alt 2-S-15	Yes	Alt 3-S-15	Yes	Alt 4-S-15	Yes	Alt 5-S-15	Yes	2030 Alt 2-S-8	Yes
(Continued on Next Page)													

TABLE ES–2
SIGNIFICANT IMPACT SUMMARY

Location	Jurisdiction	Year 2050 Cumulative Impacts										Year 2030 Direct Impacts	
		Alternative 1	Mitigated? (Y/N)	Alternative 2	Mitigated? (Y/N)	Alternative 3	Mitigated? (Y/N)	Alternative 4	Mitigated? (Y/N)	Alternative 5	Mitigated? (Y/N)	Alternative 2 (25%)	Mitigated? (Y/N)
(Continued from Previous Page)													
Sports Arena Blvd													
22. Midway Dr to Kemper St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
23. Kemper St to East Dr	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
24. East Dr to Rosecrans St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
25. Rosecrans St to Enterprise St	San Diego	—	—	Alt 2-S-16	Yes	Alt 3-S-16	Yes	Alt 4-S-16	Yes	Alt 5-S-16	Yes	—	—
Midway Drive													
26. East Dr to Rosecrans St	San Diego	—	—	Alt 2-S-17	No	Alt 3-S-17	No	Alt 4-S-17	No	Alt 5-S-17	No	—	—
27. Rosecrans St to Bogley Dr	San Diego	—	—	Alt 2-S-18	Yes	Alt 3-S-18	Yes	Alt 4-S-18	Yes	Alt 5-S-18	Yes	—	—
28. Bogley Dr to Barnett Ave	San Diego	—	—	Alt 2-S-19	No	Alt 3-S-19	Yes	Alt 4-S-19	No	Alt 5-S-19	No	2030 Alt 2-S-9	Yes
Lytton Street													
29. Rosecrans St to St. Charles St	San Diego	—	—	Alt 2-S-20	Yes	Alt 3-S-20	Yes	Alt 4-S-20	Yes	Alt 5-S-20	Yes	—	—
Barnett Avenue													
30. St. Charles St to Henderson Ave	San Diego	—	—	Alt 2-S-21	Yes	Alt 3-S-21	Yes	Alt 4-S-21	Yes	Alt 5-S-21	Yes	2030 Alt 2-S-10	Yes
31. Henderson Ave to Pacific Hwy	San Diego	—	—	Alt 2-S-22	Yes	Alt 3-S-22	Yes	Alt 4-S-22	Yes	Alt 5-S-22	Yes	2030 Alt 2-S-11	Yes
Hancock **Street**													
32. Old Town Ave to Witherby St	San Diego	Alt 1-S-1	Yes	Alt 2-S-23	Yes	Alt 3-S-23	Yes	Alt 4-S-23	Yes	Alt 5-S-23	Yes	2030 Alt 2-S-12	Yes
33. Witherby St to Noell St	San Diego	—	—	Alt 2-S-24	Yes	Alt 3-S-24	Yes	Alt 4-S-24	Yes	Alt 5-S-24	Yes	—	—
34. Noell St to W. Washington St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
W. Washington Street													
35. Admiral Boland Way to Pacific Hwy	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
36. Pacific Hwy to Hancock St	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
37. Hancock St to W. University Ave	San Diego	—	—	Alt 2-S-25	No	Alt 3-S-25	No	Alt 4-S-25	No	Alt 5-S-25	No	—	—
FREEWAY MAINLINE SEGMENTS													
1. I-5: SeaWorld Dr to I-8	Caltrans	—	—	—	—	—	—	—	—	—	—	—	—
2. I-5: I-8 to Old Town Ave	Caltrans	—	—	Alt 2-F-1	No	Alt 3-F-1	No	Alt 4-F-1	No	Alt 5-F-1	No	—	—
3. I-5: Old Town Ave to Washington St	Caltrans	—	—	—	—	—	—	—	—	—	—	—	—
4. I-5: Washington St to Sassafras St	Caltrans	—	—	—	—	—	—	—	—	—	—	—	—
5. I-5: Sassafras St to Pacific Hwy Viaduct	Caltrans	—	—	—	—	—	—	—	—	—	—	—	—
6. I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	—	—	Alt 2-F-2	No	Alt 3-F-2	No	Alt 4-F-2	No	Alt 5-F-2	No	2030 Alt 2-F-1	No
7. I-5: Laurel St to Hawthorn St	Caltrans			Alt 2-F-3	No	Alt 3-F-3	No	Alt 4-F-3	No	Alt 5-F-3	No	2030 Alt 2-F-2	No
8. I-5: Hawthorn St to 1st Ave	Caltrans			Alt 2-F-4	No	Alt 3-F-4	No	Alt 4-F-4	No	Alt 5-F-4	No	2030 Alt 2-F-3	No
9. I-5: 1st Ave to 6th Ave	Caltrans			Alt 2-F-5	No	Alt 3-F-5	No	Alt 4-F-5	No	Alt 5-F-5	No	2030 Alt 2-F-4	No
10. I-5: 6th Ave to SR-163	Caltrans			Alt 2-F-6	No	Alt 3-F-6	No	Alt 4-F-6	No	Alt 5-F-6	No	2030 Alt 2-F-5	No
11. I-8: W. Mission Bay Dr/Midway Dr to I-5	Caltrans	—	—	—	—	—	—	—	—	—	—	—	—
12. I-8: I-5 to Morena Blvd	Caltrans	—	—	Alt 2-F-7	No	Alt 3-F-7	No	Alt 4-F-7	No	Alt 5-F-7	No	—	—
(Continued on Next Page)													

TABLE ES–2
SIGNIFICANT IMPACT SUMMARY

Location	Jurisdiction	Year 2050 Cumulative Impacts										Year 2030 Direct Impacts	
		Alternative 1	Mitigated? (Y/N)	Alternative 2	Mitigated? (Y/N)	Alternative 3	Mitigated? (Y/N)	Alternative 4	Mitigated? (Y/N)	Alternative 5	Mitigated? (Y/N)	Alternative 2 (25%)	Mitigated? (Y/N)
(Continued from Previous Page)													
13. I-8: Morena Blvd to Hotel Circle/Taylor Street	Caltrans	—	—	Alt 2-F-8	No	Alt 3-F-8	No	Alt 4-F-8	No	Alt 5-F-8	No	—	—
14. I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	—	—	Alt 2-F-9	No	Alt 3-F-9	No	Alt 4-F-9	No	Alt 5-F-9	No	2030 Alt 2-F-6	No
15. I-8: Hotel Circle to SR-163	Caltrans	—	—	Alt 2-F-10	No	Alt 3-F-10	No	Alt 4-F-10	No	Alt 5-F-10	No	2030 Alt 2-F-7	No
FREEWAY ON-RAMP													
1. Moore St/I-5 NB On-Ramp	Caltrans	—	—	Alt 2-R-1	Yes	Alt 3-R-1	Yes	Alt 4-R-1	Yes	Alt 5-R-1	Yes	2030 Alt 2-R-1	Yes
VEHICLE MILES TRAVELED													
VMT per Capita	San Diego	—	—	—	—	—	—	—	—	—	—	—	—
VMT per Employee	San Diego	—	—	—	—	—	—	—	—	—	—	—	—

General Notes:

1. Orange shading = Significant and unavoidable.
2. Green shading = Fully mitigated.
3. "—" = No significant impact calculated.

TABLE ES–3
ACTIVE TRANSPORTATION IMPROVEMENTS SUMMARY

ID	Location	Recommended Improvement
PEDESTRIAN NETWORK		
Tier 1 Pedestrian Improvements – *The following improvements shall be implemented as mitigation:*		
P-1.	Pacific Highway, between Old Town Transit Center Driveway and Witherby Street	Upgrade the sidewalk classification on the east side of Pacific Highway, between Old Town Transit Center Driveway and Witherby Street to a corridor sidewalk classification for Proposed Action alternatives 2 and 3 and district sidewalk classification for Proposed Action Alternative 4 and 5.
P-2.	Sports Arena Boulevard, between Rosecrans Street and Pacific Highway	Install missing sidewalks per connector sidewalk classification on both sides of Sports Arena Boulevard, between Rosecrans Street and Pacific Highway.
P-3.	Midway Drive, between Rosecrans Street and Barnett Avenue	Install missing sidewalks per connector or corridor sidewalk classifications on the north side of Midway Drive, between Rosecrans Street and Barnett Avenue.
P-4.	Witherby Street, between Pacific Highway and Hancock Street	Install missing sidewalks per connector sidewalk classification on the west side of Witherby Street, between Pacific Highway and Hancock Street.
P-5.	Sports Arena Boulevard / Rosecrans Street Intersection	Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-15 of the *Midway-Pacific Highway Community Plan*. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
P-6.	Pacific Highway / Witherby Street Intersection	Conduct a feasibility assessment of the pedestrian improvements shown Figure 3-16 of the *Midway-Pacific Highway Community Plan*. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
P-7.	Midway Drive / Enterprise Street Intersection	Conduct a feasibility assessment of the pedestrian improvements described in Page 13 of the *Midway-Pacific Impact Fee Study*. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
(Continued on Next Page)		

TABLE ES–3
ACTIVE TRANSPORTATION IMPROVEMENTS SUMMARY

ID	Location	Recommended Improvement
(Continued from Previous Page)		
P-8.	Barnett Avenue / Midway Drive Intersection	Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-13 of the *Midway-Pacific Highway Community Plan*. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
Tier 2 Pedestrian Improvements – *The following improvements should be considered:*		
P-9.	Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street.	Install missing sidewalks per connector sidewalk classification on both sides of Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street.
P-10.	Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street.	Install missing sidewalks per connector sidewalk classification on the south side of Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street.
P-11.	Jessop Lane, between Enterprise Street and Barnett Avenue	Install missing sidewalks on both sides of Jessop Lane, between Enterprise Street and Barnett Avenue.
P-12.	Kurtz Street, between Rosecrans Street and Pacific Highway	Install missing sidewalks per connector sidewalk classification on both sides of Kurtz Street, between Rosecrans Street and Pacific Highway.
P-13.	Smith Street, between Pacific Highway and Kurtz Street	Install missing sidewalks on both sides of Smith Street, Between Pacific Highway and Kurtz Street.
P-14.	Old Town Transit Center Driveway	Install missing sidewalks on south side of Old Town Transit Center Driveway off Pacific Highway.
—	—	Prepare a Pedestrian Master Plan for the Proposed Action alternatives that will guide design and implementation of policies/programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities.
(Continued on Next Page)		

TABLE ES–3
ACTIVE TRANSPORTATION IMPROVEMENTS SUMMARY

ID	Location	Recommended Improvement
(Continued from Previous Page)		
BICYCLE NETWORK		
Tier 1 Bicycle Improvements – *The following improvements shall be implemented as mitigation:*		
B-1.	Pacific Highway, between Old Town Transit Center Driveway and Witherby Street	Provide Class IV bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.
B-2.	Witherby Street, between Pacific Highway and Hancock Street	Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.
B-3.	Sports Arena Boulevard, between Rosecrans Street and Pacific Highway	Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.
B-4.	Midway Drive, between Rosecrans Street and Barnett Avenue	Provide Class I bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.
B-5.	Enterprise Street, between Pacific Highway and Midway Drive	Upgrade the bicycle classification from Class III to Class II.
Tier 2 Bicycle Improvements – *The following improvements should be considered:*		
B-6.	Taylor Street, between Kurtz Street and Presidio Drive	Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan* and the *Old Town Community Plan*.
B-7.	Juan Street, between Taylor Street and Witherby Street	Provide Class III bicycle facilities consistent with the *Old Town Community Plan.*
B-8.	Barnett Avenue, between Henderson Avenue and Midway Drive	Provide a Class II bicycle facility (south side only) consistent with the *Midway-Pacific Highway Community Plan*.
B-9.	Hancock Street, between Old Town Avenue to Noell Street	Provide a Class II bicycle facility consistent with the *Midway-Pacific Highway Community Plan*.
B-10.	Old Town Avenue, between Hancock Street and San Diego Avenue	Provide a Class II bicycle facility consistent with the *Midway-Pacific Highway Community Plan* and *Old Town Community Plan.*
(Continued on Next Page)		

Table ES–3
Active Transportation Improvements Summary

ID	Location	Recommended Improvement
(Continued from Previous Page)		
B-11.	Sports Arena Boulevard, between Kemper Street and 1,050 feet east of Kemper Street	Replace the existing the Class III bicycle facility on the south side of Sport Arena Boulevard to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.
B-12.	Rosecrans Street, between Madrid Street and Midway Drive	Replace the existing the Class III bicycle facility on the west side of Rosecrans Street to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.
—	—	Prepare a bicycle master plan for the Proposed Action alternatives that will guide design and implementation of policies/programs to enhance access and mobility around and within the site for bicyclist of all ages and abilities.
TRANSIT NETWORK		
T-1.	Midway Drive, between East Drive to Rosecrans Street	It is recommended to further evaluate the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action alternatives should provide transit signal priority improvements.
T-2.	Rosecrans Street, between Dewey Road and Pacific Highway	It is recommended to further evaluate the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action alternatives should provide transit signal priority improvements.
T-3.	Pacific Highway, between Friars Road and Washington Street	It is recommended to further evaluate the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action alternatives should provide transit signal priority improvements.
T-4.	Taylor Street between Presidio Drive and I-8 Eastbound Ramps	It is recommended to further evaluate the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action alternatives should provide transit signal priority improvements.
—	—	Prepare a Transit Mobility Plan for Proposed Action alternative 4 and Proposed Action alternative 5 as these two alternatives propose to relocate the existing Old Town Transit Center to within the site.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS *(CONTINUED)*

TABLE OF CONTENTS (*CONTINUED*)

SECTION | PAGE

TABLE OF CONTENTS *(CONTINUED)*

SECTION PAGE

APPENDICES

APPENDIX

A. Intersection Methodology

B. Caltrans Ramp Metering Data and Traffic Volumes

C. Intersection and Segment Manual Count Sheets

D. Existing Intersection Analysis Calculation Sheets

E. Existing Freeway Analysis Calculation Sheets

F. Ridership & Trip Generation Estimates for Proposed Automated People Mover, prepared by WSP, March 31, 2020

G. SANDAG Modeling Inputs

H. Year 2050 No Action Alternative Intersection Analysis Calculation Sheets

I. Year 2050 No Action Alternative Freeway Analysis Calculation Sheets

J. Year 2050 with Alternative 1 Intersection Analysis Calculation Sheets

K. Year 2050 with Alternative 1 Freeway Analysis Calculation Sheets

L. Year 2050 with Alternative 2 Intersection Analysis Calculation Sheets

M. Year 2050 with Alternative 2 Freeway Analysis Calculation Sheets

N. Year 2050 with Alternative 3 Intersection Analysis Calculation Sheets

O. Year 2050 with Alternative 3 Freeway Analysis Calculation Sheets

P. Year 2050 No Action Alternative including an APM Intersection Analysis Calculation Sheets

Q. Year 2050 No Action Alternative including an APM Freeway Analysis Calculation Sheets

R. Year 2050 with Alternative 4 Intersection Analysis Calculation Sheets

S. Year 2050 with Alternative 4 Freeway Analysis Calculation Sheets

T. Year 2050 with Alternative 5 Intersection Analysis Calculation Sheets

U. Year 2050 with Alternative 5 Freeway Analysis Calculation Sheets

V. Near-Term Year 2030 Intersection Analysis Calculation Sheets

W. Near-Term Year 2030 Freeway Analysis Calculation Sheets

X. Near-Term Year 2030 with Alternative 2 (25%) Intersection Analysis Calculation Sheets

Y. Near-Term Year 2030 with Alternative 2 (25%) Freeway Analysis Calculation Sheets

Z. Midway-Pacific Community Plan Figure Excerpts

AA. City of San Diego Draft Transportation Study Manual, Appendix B

BB. Construction Assessment Information

CC. SANDAG Regional Travel Model VMT Reports

LIST OF FIGURES

LIST OF FIGURES *(CONTINUED)*

SECTION—FIGURE # | PAGE

LIST OF TABLES

TRANSPORTATION IMPACT ANALYSIS
DRAFT

NAVY OLD TOWN CAMPUS REVITALIZATION

San Diego, California
September 22, 2020

1.0 INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has been retained to provide professional transportation engineering services associated with the Navy Revitalization Old Town Campus (OTC) Propose Action alternatives. The Proposed Action is to revitalize the OTC in order to provide mission capable facilities for NAVWAR and other tenant commands on OTC. Redevelopment could include Navy recapitalization of the site or redevelopment through a public-private partnership.

Naval Information Systems Command (NAVWAR) (formerly known as Space and Naval Warfare Systems Command or SPAWAR) vision is to rapidly deliver cyber warfighting capability from seabed to space. NAVWAR's mission incorporates advanced technologies that enable new operational concepts to provide a competitive edge in the cyber, information warfare and space domains. NAVWAR is the primary tenant on the Naval Base (NAVBASE) Point Loma OTC. NAVBASE Point Loma is a Command of the United States (U.S.) Navy, located in San Diego, California that was established on October 1, 1998 through a consolidation of multiple Navy facilities in the San Diego region. NAVWAR proposes to revitalize NAVBASE Point Loma's OTC, which would include the construction of buildings, utilities, and infrastructure to provide mission capable facilities for NAVWAR and other tenant commands on OTC. Revitalization efforts could include Navy recapitalization of the site or redevelopment through a public-private partnership. As the property owner, the Navy (represented by NAVBASE Point Loma) would enter into a lease (pursuant to 10 U.S. Code [U.S.C.] section 2667) or a public-private partnership agreement to redevelop the OTC. NAVWAR is the action proponent for the revitalization.

As part of the process to identify revitalization alternatives, the Navy entered into an agreement with the San Diego Association of Governments (SANDAG) on September 19, 2019 to consider locating a regional transit center on the OTC as part of the revitalization effort. The agreement outlined a planning process and proposed timeline to study redevelopment of the OTC to provide mission capable facilities for NAVWAR including consideration of a transit center on the OTC that could improve transportation options for the people of San Diego, including Department of Defense (DoD) employees, to access the San Diego International Airport. The agreement is designed to provide flexibility in designing and delivering a mixed-use development compatible with the military missions of NAVWAR.

The Navy is preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality (CEQ) Regulations and Navy regulations for implementing NEPA. If an alternative including a transit center is selected, the ultimate development of the transit center will be the responsibility of SANDAG, who may seek funding or collaboration from other stakeholders, including the U.S. Department of Transportation and State of California, to assist with the cost of public improvements. Thus, an additional planning process to comply with both NEPA and the California Environmental Quality Act (CEQA) related to development of the transit center would be required prior to approval and construction.

LLG, Engineers has prepared this Transportation Impact Analysis as part of the planning process complying with both NEPA and CEQA. This Transportation Impact Analysis analyzes the impacts from the Proposed Action alternatives based on the currently adopted guidelines which focus on automobile delay and Level of Service. A Vehicle Miles Traveled (VMT) analysis is also included pursuant to Senate Bill (SB) 743.

In addition to the vehicular mode analyses, the multi-modal network in the influence of the Proposed Action alternatives study area was also reviewed. This included pedestrian, bicycle and transit mobility. Other mobility improvement strategies such as Intelligent Transportation Systems (ITS) (i.e. Adaptive Signal Systems, Transit Signal Priority) and Transportation Demand Management (TDM) measures were also explored as a way to partially mitigate the expected impacts of the Proposed Action alternatives. *Section 27.0* of this report provides additional details on this topic.

2.0 PROPOSED ACTION DESCRIPTION

2.1 Background

The OTC site was first used by the armed forces in 1940 via subcontract to the U.S. Army Air Corps. Use of the site transitioned to the United States Air Force in 1947. Known as Air Force Plant 19, the facility was operated by General Dynamics Corporation from approximately 1940 to the mid-1970s and was primarily used for aircraft production. Since the late 1970s, aircraft assembly was replaced by subassembly activities for various missile production programs. In 1994, ownership of the property was transferred from Air Force to the Navy (with oversight given to NAVBASE Point Loma) and manufacturing activities focused on space launch vehicle assembly as conducted by varying military contractors.

NAVWAR established the OTC site as their headquarters in 1996, with a mission focus of Navy cyber security. Site activities have since grown to include development, acquisition, and life cycle management of command, control, communications, computers, intelligence, surveillance, and reconnaissance systems for Navy, Marine Corps, and selected joint service, allied nation, and other government agency programs. NAVWAR currently employs 5,192 personnel in San Diego (94 percent of these employees are civilians) and provides approximately 1.58 billion dollars of economic benefit to the San Diego region.

The existing OTC facilities are beyond their useful life and their degradation is impacting NAVWAR's cyber warfare mission, security, and workforce safety. The Navy requires secure, safe, modern state-of-the-art space to support NAVWAR's mission requirements. NAVWAR facilities requirements include:

- Laboratory space for diagnostics, testing, evaluation, and assembly of computers, communications equipment, cyber-security, and other command and control, communications, computers, intelligence, surveillance, and reconnaissance functions (laboratory spaces may be designated as secure, requiring controlled access and specialized infrastructure).
- Warehouse and storage space to store crates of materials, sensitive electronic and computer equipment, and other materials required to support the mission (warehouse and storage spaces must accommodate forklifts, loading docks, and delivery vehicles).
- Office and administrative space for conducting executive operations and comptroller, contracts, legal, program management, engineering, and administrative support functions, including conference and auditorium space.
- Parking for personnel and visitors working at OTC.

In September 2018, the Navy issued a Request for Interest to evaluate the availability and adequacy of potential business sources to revitalize OTC through a public-private development agreement. In November 2018, the Navy held an Industry Day event to solicit responses to the Request for Interest and highlighted the Navy's willingness to consider all types of concepts to achieve Navy goals for revitalizing OTC, including long-term leases, a land exchange, or sale. The Request for Interest process resulted in 12 responses, four of which contained substantive market research for potential mixed-use redevelopment scenarios on OTC. Land exchange opportunities were not identified in the submittals.

As a result of the Navy's Request for Interest, SANDAG expressed interest in OTC as a potential location for a new transit center to provide a direct mass transit connection from San Diego and adjacent cities to the San Diego International Airport. SANDAG and the Navy signed agreements on September 19, 2019 and January 23, 2020 to define collaboration between the Navy and SANDAG on site planning and analyzing the development potential of OTC. The Navy and SANDAG worked in collaboration to explore various options for accomplishing their respective goals, including alternatives with and without a transit center on OTC.

These alternatives are described in further detail in *Section 2.3* of this report.

2.2 Location

OTC comprises two sites totaling 70.5 acres: OTC Site 1 is 48.7 acres and OTC Site 2 is 21.8 acres. OTC Site 1 is bordered by Pacific Highway to the west, Interstate 5 to the north and east, a railroad right-of-way to the east, and Barnett Avenue to the south. OTC Site 2 is adjacent to OTC Site 1 to the west. OTC Site 2 is bordered by Midway Drive to the west, Rosecrans Street to the North, Pacific Highway to the east, and Barnett Avenue to the south.

OTC is located north of downtown San Diego and south of Old Town San Diego, approximately 1/2-mile north of San Diego International Airport. The neighborhood of Mission Hills is located to the east and the Midway District and Liberty Station is located to the west. The Old Town Transit Center, an intermodal transportation station providing local bus and trolley service, commuter rail service, and regional rail service, is located approximately 400 feet north of OTC Site 1.

OTC is located in an urbanized area containing numerous shopping centers, institutional facilities, multifamily residential developments, visitor-oriented uses, and older industrial areas. The area is characterized by flat topography, and a varied mixture of auto-oriented large and small commercial developments. The Pacific Highway corridor, located between Interstate 5 on the east and Marine Corps Recruit Depot and San Diego International Airport on the west, contains commercial and industrial uses, multifamily residential developments, and airport-related commercial uses.

Figure 2–1 shows the Vicinity Map. ***Figure 2–2*** shows a more detailed map of the area surrounding the Navy OTC site.

The majority (95 percent) of the property is covered with buildings and pavement. OTC Site 1 includes three former World War II-era aircraft production warehouses (Buildings 1, 2, and 3), each approximately 310,000 square feet. The warehouses have been retrofitted as administrative office, laboratory, and storage spaces. Smaller buildings (Buildings 4, 7, 8, 27, 28, and 34) are distributed around Buildings 1, 2, and 3, along with paved access roads, vehicle parking, and materials storage areas. OTC Site 2 is dominated by operational supply Building 2555 (approximately 136,000 square feet). The remainder of the site comprises surface parking and a few small outbuildings (Buildings 34 and 40).

OTC is located within the City of San Diego's Midway-Pacific Highway Community Planning Area, which has an adopted Community Plan that describes the long-term development goals for the community. The Community Plan defines 12 distinct villages and districts within the planning area. Each village or district has a defined vision, and land use designations and policies to achieve this vision.

OTC is located within the Community Plan area defined as the Dutch Flats Urban Village. The Community Plan describes the vision for Dutch Flats as an employment and residential-focused urban village, with office and other "flex" or innovation spaces to complement and support the existing OTC uses. The Dutch Flats Urban Village provides opportunities for defense-related, research and development, other similarly focused industries to establish business locations in proximity to transit, Downtown, and San Diego International Airport. Revitalization of OTC provides a unique opportunity to satisfy urgent military mission requirements and advance the Midway-Pacific Highway Community Plan vision.

2.3 Proposed Action Alternatives

The Navy prepared an alternatives development memorandum to define the development potential on the OTC for a range of alternatives. The revitalization of OTC may be accomplished through Navy recapitalization or a number of public-private development scenarios. As such, no specific site plan has been designed for the OTC. A maximum threshold was developed for five different alternatives. This approach is a conservative analysis and should not be considered an exact representation of future development. The final development of the OTC site is subject to many variables outside of the Navy's or a private partner's control, including future market conditions, changes to regulations and other factors. The alternatives were developed using the best available information and are meant to represent an envelope approach to both maximum development and a range of lower intensity development to meet the NAVWAR purpose and need. Currently OTC is Federal property and is not subject to local zoning or development guidelines. Future revitalization of OTC anticipates the property will remain in Federal ownership and the types and intensities of mixed-use development proposed would be allowable under existing law.

In addition to the no action alternative, five action alternatives were developed for analysis. These include revitalization through Navy capital improvements only, two scenarios of mixed-use public-private development, and two scenarios of mixed-use public-private development including consideration of a potential transit center.

Alternative 1 includes all existing NAVWAR functions and requirements remaining on OTC. For Alternatives 2, 3, 4, and 5, NAVWAR determined certain functions, primarily open storage/laydown and warehouse space, may be more efficiently accommodated at an off-site location or locations, yet to be determined, that are deemed acceptable by the Navy.

The alternatives are defined in the following sections. The land use summaries for the alternatives are provided at the end of this report section in ***Table 2–1***.

2.3.1 *No-Action Alternatives*

Under the baseline No Action Alternative, the Navy would continue to maintain and repair the existing facilities. NAVWAR would continue to operate at OTC and no change would occur. The No Action Alternative would not meet the purpose and need for the Proposed Action as it would not meet NAVWAR's facility requirements for secure, safe, modern, state-of-the-art facilities. In addition, the No Action alternative would not provide for efficient operations between NAVWAR functions. The No-Action Alternative will be used to analyze the consequences and potential environmental impacts of not undertaking the Proposed Action alternatives and will serve to establish a comparative baseline for analysis.

The Airport Connectivity Analysis (October 2019), prepared by WSP, Inc. for the San Diego Association of Governments (SANDAG), evaluates the development of an automated passenger mover (APM) incorporated into the proposed Intermodal Transportation Center (ITC) located near the San Diego International Airport. The Airport Authority, together with SANDAG, seeks to connect the San Diego International Airport to the region's rail transit system. Two concepts were developed that would locate the APM service at the potential transit center located on the NAVWAR site. The addition of the APM is included in the cumulative baseline of a secondary No Action Alternative condition against which Alternatives 4 and 5 are measured, since those alternatives include the transit center, as described below, which would also serve the APM. A second baseline condition termed the "No Action Alternative including an Automated Passenger Mover" was developed for measuring the impacts of Alternative 4 and 5. More information regarding the APM is provided in *Section 8.2* of this report.

2.3.2 *Alternative 1: Navy Recapitalization at OTC*

Alternative 1 would include revitalization of OTC to meet NAVWAR's facility requirements with Navy-funded capital improvements only. This alternative does not involve private development or a transit center on the OTC site. This would include consolidating NAVWAR operations into two of the existing 310,000 square feet buildings on OTC Site 1. The existing warehouse and parking functions on OTC Site 2 would not be modified under this alternative. This alternative would include a total of 3,307,008 square feet of development and was evaluated against the No Action Alternative to determine potential significant impacts.

2.3.3 *Alternative 2: Higher-density Mixed-use Revitalization*

Alternative 2 represents a higher intensity of new public-private development on the OTC Site and would redevelop the OTC site to contain a NAVWAR footprint without warehouse and open storage with a combination of mixed use residential, office, hotel, and retail space.. Public-private development would include 6,600 residential units, one million square feet of office space, two hotels, and 180,000 square feet of retail. Retail could include restaurants and other retail shopping uses. This alternative would include 1,694,268 square feet of development for NAVWAR and 11,899,700 square feet of private mixed-use development for a total of 13,593,968 square feet of development and was evaluated against the No Action Alternative to determine potential significant impacts.

2.3.4 *Alternative 3: Lower-density Mixed-use Revitalization*

Alternative 3 represents a lower intensity of new public-private development on the OTC Site and would redevelop the OTC site to contain a NAVWAR footprint without warehouse and open storage with a combination of a lower density of mixed use residential, office, hotel, and retail space.. Public-private development would include 4,400 residential units, 650,000 square feet of office space, two hotels, and 130,000 square feet of retail. Retail could include restaurants and other retail shopping uses. This alternative would include 1,694,268 square feet of development for NAVWAR and 7,905,900 square feet of private mixed-use development for a total of 9,600,168 square feet of development and was evaluated against the No Action Alternative to determine potential significant impacts.

2.3.5 *Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center*

Alternative 4 represents a higher intensity of new public-private development on the OTC Site, including development of a transit center. Alternative 4 would redevelop the OTC site to contain a NAVWAR footprint without warehouse and open storage with a higher density of mixed use residential, office, hotel, and retail space and a transit center. Public-private development would include 10,000 residential units, 1,350,000 square feet of office space, two hotels, and 250,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1. . This alternative would include 1,694,268 square feet of development for NAVWAR and 17,895,000 square feet of private mixed-use development for a total of 19,589,268 square feet of development and was evaluated against the No Action Alternative including an Automated Passenger Mover to determine potential significant impacts.

2.3.6 *Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center*

Alternative 5 represents a lower intensity of new public-private development on the OTC Site, including development of a transit center. Alternative 5 would redevelop the OTC site to contain a NAVWAR footprint without warehouse and open storage with a combination of a lower density of mixed use residential, office, hotel, and retail space, and a transit center. Public-private development would include 8,000 residential units, 850,000 square feet of office space, two hotels, and 200,000 square feet of retail. Retail could include restaurants and other retail shopping uses. In addition, this alternative includes the construction of an onsite transit facility on OTC Site 1. This alternative would include 1,694,268 square feet of development for NAVWAR and 14,117,750 square feet of private mixed-use development for a total of 15,812,018 square feet of development and was evaluated against the No Action Alternative including an Automated Passenger Mover to determine potential significant impacts.

2.4 SANDAG Transit Center

The San Diego Association of Governments (SANDAG) initially identified the OTC as a potential site for a Transit Center by submitting a request to the Navy. The OTC site was formally included in the October 1st, 2019 Airport Connectivity Analysis report as an additional site to consider with connectivity to/from the San Diego International Airport.

Alternatives 4 and 5 consider the development of a transit center with the OTC as a Proposed Action alternatives element.

2.5 Alternatives Summary

To cover the full range of potential development intensities at the OTC, the five Proposed Action alternatives are summarized as follows in ***Table 2–1***.

TABLE 2–1
SUMMARY OF ON-SITE DEVELOPMENT ALTERNATIVES

Development Details	Alternative 1 [b]	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Navy Development	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**
Office	1,019,364	845,326	845,326	845,326	845,326
Laboratory	174,865	165,614	165,614	165,614	165,614
Secure Conference/ Auditorium	26,156	29,156	29,156	29,156	29,156
Warehouse/Storage	481,941	24,172	24,172	24,172	24,172
Open Storage	174,267	N/A	N/A	N/A	N/A
Parking [a]	1,430,415 (4,541 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)	630,000 (2,000 stalls)
Navy Development Total	**3,307,008**	**1,694,268**	**1,694,268**	**1,694,268**	**1,694,268**
Private Development	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**	**Total Square Feet (Equivalent Unit)**
Residential	Not applicable	6,336,000 (6,600 units)	4,224,000 (4,400 units)	9,600,000 (10,000 units)	7,680,000 (8,000 units)
Residential-Parking	Not applicable	3,326,400 (9,504 stalls)	2,217,600 (6,336 stalls)	5,040,000 (14,400 stalls)	4,032,000 (11,520 stalls)
Office	Not applicable	1,000,000	650,000	1,350,000	850,000
Office-Parking	Not applicable	525,000 (1,500 stalls)	341,250 (975 stalls)	708,750 (2,025 stalls)	446,250 (1,275 stalls)
Hotel	Not applicable	260,000 (2 hotels, 400 rooms)	160,000 (1 hotel, 250 rooms)	290,000 (2 hotels, 450 rooms)	290,000 (2 hotels, 450 rooms)
Hotel-Parking	Not applicable	140,000 (400 stalls)	87,500 (250 stalls)	157,500 (450 stalls)	157,500 (450 stalls)
Retail	Not applicable	180,000	130,000	250,000	200,000
Retail-Parking	Not applicable	132,300 (378 stalls)	95,550 (273 stalls)	183,750 (525 stalls)	147,000 (420 stalls)
Transit Center	Not applicable	Not applicable	Not applicable	140,000	140,000
Transit Center-Parking	Not applicable	Not applicable	Not applicable	175,000 (500 stalls)	175,000 (500 stalls)
Private Development Total	Not applicable	**11,899,700**	**7,905,900**	**17,895,000**	**14,117,750**
GRAND TOTAL	**3,307,008**	**13,593,968**	**9,600,168**	**19,589,268**	**15,812,018**

Source: Table 2-3, Alternatives Summary Matrix, Navy OTC Revitallization EIS, Draft DOPAA.

Footnotes:

a. In support of NAVWAR's parking requirement, 4,358 stalls would be required, either on-site or at a separate nearby location.
b. Alternative 1 represents requirements identified by NAVWAR through a basic facility requirements document.

General Notes:

1. SF = Square feet.

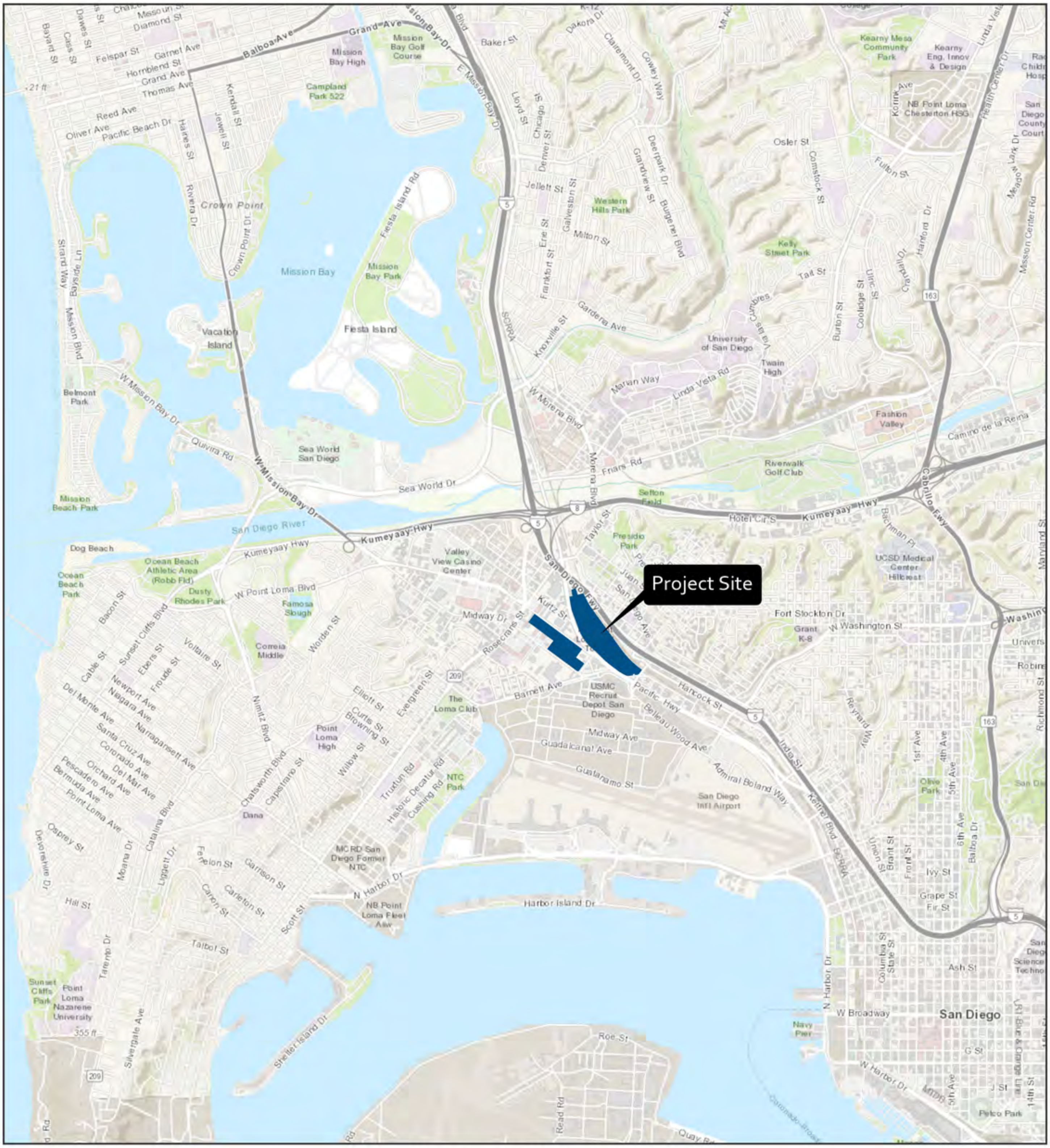


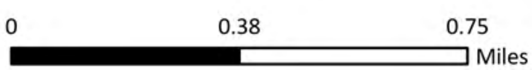
Figure 2-1 Vicinity Map

Source: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

0 1 2 Miles

Figure 2-2 Surrounding Area Map

Source: SANDAG & SanGIS



3.0 STUDY AREA, ANALYSIS APPROACH, AND METHODOLOGY

3.1 Study Area

The study area for the Proposed Action was developed based on guidelines contained in the *City of San Diego Traffic Impact Study Manual* and a working knowledge of the local transportation system. Below lists study area locations included in the analysis:

<u>STUDY INTERSECTIONS</u>

1. Taylor St/ Hotel Circle South
2. Taylor St/ I-8 EB Ramps
3. Taylor St/ Morena Blvd/Whitman St
4. Taylor St/ Juan St
5. Congress St/ Taylor St
6. Pacific Hwy/ Rosecrans St/Taylor St
7. Rosecrans St/ Jefferson St
8. Camino Del Rio W/ Hancock St
9. Camino Del Rio W/ Kurtz St
10. Rosecrans St/ Kurtz St
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W
12. Rosecrans St/ Midway Dr
13. Sunset Cliffs Boulevard/ I-8 Eastbound On-Ramp
14. Truxtun Rd/ Lytton St/Barnett Ave
15. Midway Dr/ Enterprise St
16. Barnett Ave/ Midway Dr
17. Pacific Hwy/ Telegraph Pl
18. Pacific Hwy/ Kurtz St
19. Sports Arena Blvd/ Pacific Hwy
20. Pacific Hwy/ Enterprise St
21. Pacific Hwy/ Barnett Ave
22. Old Town Ave/ San Diego Ave
23. Old Town Ave/ Moore St
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps
25. Witherby St/ Hancock St
26. Witherby St/ Pacific Hwy
27. Tripoli Ave/ Witherby St
28. Noell St/ Hancock St
29. Washington St/ San Diego Ave
30. Washington St/ Hancock St
31. Washington St/ Pacific Hwy (N)
32. Washington St/ Pacific Hwy (S)
33. Pacific Hwy/ Sassafras St
34. Pacific Hwy / Laurel St
35. Harbor Dr / Laurel St
36. Pacific Highway / Sea World Dr
37. Sea World Dr / I-5 SB Ramps
38. Sea World Dr / I-5 NB Ramps
39. Morena Blvd / Linda Vista Rd

STUDY SEGMENTS

Rosecrans Street
1. Dewey Rd to Lytton St
2. Lytton St to Midway Dr
3. Midway Dr to Sports Arena Blvd
4. Sports Arena Blvd to Kurtz St
5. E: Kurtz St to Pacific Hwy

Taylor Street
6. Pacific Hwy to Congress St
7. Congress St to Juan St
8. Juan St to Presidio Dr
9. Presidio Dr to I-8 East Ramp

Hotel Circle S.
10. I-8 East Ramp to Bachman Pl

Pacific Highway
11. SeaWorld Dr to Taylor St
12. Taylor St to Kurtz St
13. Kurtz St to Enterprise St
14. Enterprise St to Barnett Ave
15. Barnett Ave to Witherby St
16. Witherby St to W. Washington St
17. W. Washington St to Sassafras St
18. Sassafras St to W. Laurel St

Morena Boulevard
19. Friars Rd to I-8

Linda Vista Road
20. Morena Blvd to Colusa St

Kurtz Street
21. Rosecrans to Pacific Hwy

Sports Arena Blvd
22. Point Loma Bl/Midway Dr to Kemper St
23. Kemper St to East Dr
24. East Dr to Rosecrans St
25. Rosecrans St to Enterprise St

Midway Drive
26. East Dr to Rosecrans St
27. Rosecrans St to Bogley Dr
28. Bogley Dr to Barnett Ave

Lytton Street
29. Rosecrans St to St. Charles St

Barnett Avenue
30. St. Charles St to Henderson Ave
31. Henderson Ave to Pacific Hwy

Hancock Street
32. Old Town Ave to Witherby St
33. Witherby St to Noell St
34. Noell St to W. Washington St

W. Washington Street
35. Admiral Boland Way to Pacific Hwy
36. Pacific Hwy to Hancock St
37. Hancock St to W. University Ave

STUDY FREEWAY MAINLINE SEGMENTS

Interstate
1. SeaWorld Drive to I-8
2. I-8 to Old Town Avenue
3. Old Town Avenue to Washington Street
4. Washington Street to Sassafras Street
5. Sassafras Street to Pacific Highway Viaduct
6. Pacific Highway Viaduct to Laurel Street
7. Laurel Street to Hawthorn Street
8. Hawthorn Street to 1st Avenue
9. 1st Avenue to 6th Avenue
10. 6th Avenue to SR-163

Interstate 8

11. W. Mission Bay Drive/Midway Drive to I-5
12. I-5 to Morena Boulevard
13. Morena Boulevard to Hotel Circle/Taylor Street
14. Taylor Street/Hotel Circle to Hotel Circle
15. Hotel Circle to SR-163

STUDY METERED FREEWAY ON RAMPS

1. Old Town Avenue/Moore Street to Northbound I-5

3.2 Analysis Approach

The Proposed Action alternatives consist of a no-action alternative and five intensified land use alternatives. Given the scale of each alternative, development of any Proposed Action alternative will occur over several years into the future. In order to provide for a worst-case analysis, significant impacts were measured assuming complete construction of each alternative over baseline conditions. The Year 2050 was selected as the baseline year for estimated alternative completion. Thus, the Year 2050 No-Action Alternative provides the baseline for measure significant *cumulative* transportation impacts.

As previously mentioned, the Airport Connectivity Analysis evaluates the development of an automated passenger mover (APM) incorporated into the proposed Intermodal Transportation Center (ITC) located near the San Diego International Airport. The Airport Authority, together with SANDAG, seeks to connect the San Diego International Airport to the region’s rail transit system. Two concepts were developed that would locate the APM service at the potential transit center located on the NAVWAR site. The addition of the APM is included in a secondary Year 2050 cumulative baseline against which Alternatives 4 and 5 are measured, since those alternatives include the transit center. Thus, the Year 2050 No Action Alternative including an Automated Passenger Mover condition was developed for measuring the impacts of Alternative 4 and 5. More information regarding the APM is provided in *Section 8.2* of this report.

An interim near-term condition is also evaluated for consistency with local requirements in evaluating significant *direct* transportation impacts. The Year 2030 was selected for the near-term condition. A portion of Alternative 2: Higher-density Mixed-use Revitalization represents the most intense land use development and resulting trip generation (without the transit center) that could partially develop within a 10-year timeframe. Thus, the near-term analysis assumes 25% of Alternative 2 would develop by Year 2030.

Table 3–1 shows the analyses performed in each of the scenarios to determine the potential impacts to the roadway system.

TABLE 3–1
LEVEL OF SERVICE ANALYSIS SCENARIOS

Scenarios	Analysis Performed
• Existing (Year 2020) • Year 2050 No-Action Alternative • Year 2050 with No-Action Alternative including an Automated Passenger Mover • Year 2050 with Alternative 1: Navy Recapitalization at OTC • Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization • Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization • Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center • Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center • Near-Term Year 2030 • Near-Term with Year 2030 Alternative 2: Higher-density Mixed-use Revitalization (25%)	• Peak Hour Intersection Analysis • Daily Street Segment Analysis • Peak Hour Freeway Mainline Analysis • Peak Hour Freeway Ramp Meter Analysis

3.3 Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis considering factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

3.3.1 *Intersections*

Signalized intersections were analyzed under weekday 7:00-9:00 a.m. and 4:00-6:00 p.m. peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2016 Highway Capacity Manual (HCM 6th Edition)*, with the assistance of the *Synchro* (version 10) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS. A more detailed explanation of the methodology is attached in ***Appendix A***. ***Table 3–2*** shows the signalized intersection delay categorized for each level of service (LOS).

City of San Diego and Caltrans location-specific signal timing plan information such as minimum greens, cycle lengths, splits for the freeway interchanges and real-time peak hour field observations were included in the analysis, where available. In addition, where applicable, the presence of railroad/trolley crossings near intersections where accounted for in the analysis.

Unsignalized intersections were analyzed under weekday 7:00-9:00 a.m. and 4:00-6:00 p.m. peak hour conditions. Average vehicle delay and Levels of Service (LOS) were determined based upon the procedures found in Chapters 19 and 20 of the *HCM 6*, with the assistance of the *Synchro* (version 10) computer software. A more detailed explanation of the methodology is attached in *Appendix A*. *Table 3–2* shows the unsignalized intersection delay categorized for each level of service (LOS).

TABLE 3–2
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Highway Capacity Manual

The HCM 6th edition analysis methodology requires strict adherence to standard dual ring National Electrical Manufacturers Association (NEMA) phasing. Conflicting phase overlaps, clustered intersections or other non-compliant phasing sequences cannot be analyzed using this method.

3.3.2 *Street Segments*

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego’s *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. ***Table 3–3*** shows the City of San Diego’s Roadway Classification.

TABLE 3–3
LEVEL OF SERVICE (LOS) THRESHOLDS FOR ROADWAY SEGMENTS

Classification	Lanes	Level of Service (LOS)				
		A	**B**	**C**	**D**	**E**
Freeway	8	60,000	84,000	120,000	140,000	150,000
Freeway	6	45,000	63,000	90,000	110,000	120,000
Freeway	4	30,000	42,000	60,000	70,000	80,000
Expressway	6	30,000	42,000	60,000	70,000	80,000
Prime Arterial	6	25,000	35,000	50,000	55,000	60,000
Major Arterial	6	20,000	28,000	40,000	45,000	50,000
Major Arterial	4	15,000	21,000	30,000	35,000	40,000
Collector	4	10,000	14,000	20,000	25,000	30,000
Collector (no center lane or continuous left-turn lane)	4 2	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industry fronting)	2	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2	2,500	3,500	5,000	6,500	8,000
Collector (single-family)	2	—	—	2,200	—	—

Notes:
1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Source: City of San Diego Traffic Impact Study Manual

3.3.3 *Freeway Segments*

Freeway segments were analyzed under a.m. and p.m. peak hour based on the standards outlined in the *Caltrans Guide for the Preparation of Traffic Impact Studies using Highway Capacity Manual* (HCM 6th Edition). The freeway analyses were conducted using the *Highway Capacity Software* (HCS version 7.3). The freeway analysis is based on assessing freeway operations based on traffic volumes, freeway lane configurations and other segment specific characteristics and reporting freeway volume to capacity ratio, speed and density. ***Table 3–4*** presents the freeway segment criteria based on density.

TABLE 3–4
FREEWAY SEGMENT LOS CRITERIA

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. *Source: HCM 6th Edition*
2. pc/mi/ln– Passenger car per mile per lane

The freeway analyses significance criteria uses “Volume to Capacity ratio (v/c)” or “Speed” as the measures of effectiveness (MOE) to determine impacts on freeways. While Freeway Density has been reported in the analyses, v/c was used as the MOE to determine significant project impacts on freeways given the software limitations in reporting speeds at congested conditions (i.e. LOS F).

3.3.4 *Metered Freeway On-Ramps*

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving the safety, traffic operations, and flow on the freeway main lanes. Freeway ramp meter analysis estimates the peak hour queues and delays at freeway ramps by comparing existing and projected volumes to the meter rate at the given location.

Ramp meter delays and queues are reported using *the “Fixed Rate” method*. The fixed rate approach is based on the specific time intervals at which the ramp meter is programmed to release traffic based on Caltrans’ most restrictive meter rates. The ramp meter rates fluctuate during the peak hour; however, to be conservative, the most restrictive rate was used. The fixed rate approach may produce unrealistic queue lengths and delays since this approach does not take into account driver behavior such as “ramp shopping” or trip diversion. As a result, field observations were conducted to observe maximum delays and queues at the ramp meters.

Based on the above discussions, the following metered on-ramps to I-5 are analyzed.

1. Moore Street / NB I-5 On-Ramp (metered in the a.m. and p.m. peak hours)

The metering information was obtained from Caltrans for the above ramp and is included in ***Appendix B.***

3.3.5 *Pedestrian Mobility*

A local pedestrian mobility assessment was conducted by evaluating the existing pedestrian facilities and primary deficiencies within a ½ mile walking distance from the Proposed Action alternatives and the effects of the Proposed Action alternatives on the pedestrian network.

3.3.6 *Bicycle Mobility*

A local bicycle mobility assessment was conducted by evaluating the existing bicycle facilities, and primary deficiencies within a ½ mile bicycling distance from the Proposed Action alternatives were documented, and the effects of the Proposed Action alternatives on the bicycle network were evaluated.

3.3.7 *Transit Mobility*

An extensive transit mobility assessment was conducted by evaluating the existing transit facilities and amenities within a ½ mile walking distance from the Proposed Action alternatives and the effects of the Proposed Action alternatives on the transit network.

3.3.8 *Vehicle Miles Traveled*

In compliance with Senate Bill 743 (SB 743), this Transportation Impact Study also evaluates compliance with SB 743, this Transportation Impact Study also evaluates the potential vehicular impacts using a Vehicle Miles Traveled (VMT) metric. Public Resources Code section 20199, enacted under SB 743, identifies VMT as an appropriate metric for measuring transportation impacts. VMT analysis focuses on the number and length of vehicle trips made by the Proposed Action's employees and residents.

4.0 EXISTING VEHICULAR MOBILITY

This section presents the existing roadway conditions within the OTC area. ***Figure 4–1*** shows existing conditions diagrams for study area locations.

4.1 Existing Roadway Network

The following is a description of the existing roadway network in the study area.

Interstate 5 (I-5) is a major north-south Interstate Freeway providing interregional connectivity between San Diego County and Orange and Los Angeles Counties to the north. It has a posted speed limit of 65 miles per hour. Within the study area, I-5 generally consists of eight travel lanes in the north-south direction with additional auxiliary lanes.

Interstate 8 (I-8) is a major east-west Interstate Freeway providing interregional connectivity between San Diego County and Imperial County to the east. It has a posted speed limit of 65 miles per hour. Within the study area, I-8 generally consists of eight travel lanes in the east-west direction with additional auxiliary lanes.

Rosecrans Street is a four to six-lane roadway oriented in a north-south direction within the study area, which is from Lytton Street to Pacific Highway. North of Pacific Highway, Rosecrans Street changes names and becomes Taylor Street.

> **From Lytton Street to Sports Arena Boulevard**, Rosecrans Street is classified as a six-lane Major Arterial per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are provided on both sides of Rosecrans Street between Malaga Street and Sports Arena Boulevard. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 35 mph.
>
> **From Sports Arena Boulevard to Pacific Highway**, Rosecrans Street is classified as a four-lane Collector with a center two-way left-turn lane per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided along this segment of Rosecrans Street. On street parking is prohibited on both sides of the roadway and the posted speed limit is 35 mph.

Taylor Street transitions from a two-lane to a five-lane roadway oriented in a north-south direction within the study area, which is from Pacific Highway to Hotel Circle South. South of Pacific Highway, Taylor Street changes names and becomes Rosecrans Street.

> **From Pacific Highway to Juan Street**, Taylor Street is classified as a four to five-lane Major Arterial per the *Old Town Community Plan*. Class II bike lanes are not provided on either side of the road. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 35 mph.

From Juan Street to Morena Boulevard, Taylor Street is classified as a four-lane Major Arterial per the *Old Town Community Plan*. Class II bike lanes are not provided on either side of the road. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 35 mph.

From Morena Boulevard to Hotel Circle South, Taylor Street is classified as a two-lane Collector per the *Old Town Community Plan*. Class II bike lanes are provided on both sides of Taylor Street. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 35 mph.

Hotel Circle South is classified as a two-lane Collector (one-way) in the *Mission Valley Community Plan*. Hotel Circle South is currently constructed as a two-lane undivided roadway (two-way). On-street parking is intermittently permitted on the south side of the road. Class II bike lanes are not provided on either side of the road. The posted speed limit is 35 mph.

Pacific Highway is primarily a six-lane roadway oriented in a north-south direction within the study area, which is from Taylor Street to Laurel Street. Pacific Highway runs parallel to Interstate 5 and provides direct access to the OTC site.

From Taylor Street to Sports Arena Boulevard, Pacific Highway is classified as a six-lane Major Arterial with a raised median per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are provided on both sides of Pacific Highway. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 45 miles per hour (mph).

From Sports Arena Boulevard to Barnett Avenue, Pacific Highway is classified as a five-lane Prime Arterial with a raised median per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided along this segment of Pacific Highway except for a 200-foot section in the northbound direction near the signalized intersection at Enterprise Street. On street parking is prohibited on both sides of the roadway and the posted speed limit is 45 miles per hour.

From Barnett Avenue to Washington Street, Pacific Highway is classified as a six-lane Expressway per the *Midway-Pacific Highway Community Plan*. The existing condition along this portion of Pacific Highway includes a flyover ramp for vehicles in the northbound direction traveling to Barnett Avenue. Currently, on and off ramps to the Witherby Street undercrossing are provided, which lead to Interstate 5 via Hancock Street. Class II bike lanes are not provided on either side of the road along this section of Pacific Highway. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 55 miles per hour.

From Washington Street to Sassafras Street, Pacific Highway is classified as a six-lane Prime Arterial per the *Midway-Pacific Highway Community Plan*. The existing condition along this portion of Pacific Highway includes a flyover on-ramp for southbound vehicles traveling to southbound I-5 and a flyover off-ramp for northbound I-5 vehicles traveling to northbound Pacific Highway. Class II bike lanes are not provided on either side of the road along this section of Pacific Highway. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 45 miles per hour.

From Sassafras Street to Laurel Street, Pacific Highway is classified as a six-lane Major Arterial per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road along this section of Pacific Highway. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 45 miles per hour.

Morena Boulevard is classified as a three-lane Major Arterial per the *Old Town Community Plan*. Within the study area, which is between the I-8 Ramps and Taylor Street, Morena Boulevard is generally constructed as a four-lane divided roadway. Class II bike lanes are not provided on either side of the road. On-Street parking is prohibited on both sides of the roadway. No posted speed limit was observed.

Kurtz Street is classified as a two-lane Collector per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road. On-Street parallel parking is permitted on both sides of the roadway. The posted speed limit is 30 mph.

Sports Arena Boulevard transitions from a two-lane to a five-lane roadway oriented in a north-south direction within the study area, which is from Kemper Street to Enterprise Street. Sports Arena Boulevard provides vehicular and pedestrian access to the OTC site's existing North and West parking lots.

From Kemper Street to Rosecrans Street, Sports Arena Boulevard is classified as a five-lane Major Arterial with a raised median per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road along this section of Sports Arena Boulevard. On-Street parking is prohibited on both sides of the roadway and the posted speed limit is 35 miles per hour (mph).

From Rosecrans Street to Enterprise Street, Sports Arena Boulevard is classified as a two-lane Collector per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road along this section of Sports Arena Boulevard. On-Street parallel parking is permitted on both sides of the roadway and the posted speed limit is 35 miles per hour (mph).

Enterprise Street functions as a two-lane Collector with a center two-way left-turn lane from Pacific Highway to Midway Drive. The *Midway-Pacific Highway Community Plan* does not classify this roadway. Enterprise Street provides vehicular and pedestrian access to the OTC site's existing West parking lot. Sidewalks are provided along both sides of the road. Angled parking is provided on both sides of the road and there is no posted speed limit on this roadway.

Midway Drive is classified as a four-lane Collector with a center two-way left-turn lane per the *Midway-Pacific Highway Community Plan*. On-street parking is intermittently permitted on the south side of the road. Class II bike lanes are not provided on either side of the road. The posted speed limit is 35 mph.

Lytton Street is classified as a four-lane Collector with a center two-way left-turn lane per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road. On-Street parking is prohibited on both sides of the roadway. The posted speed limit is 40 mph. East of Truxtun Road, Lytton Street changes names and becomes Barnett Avenue.

Barnett Avenue is classified as a four-lane Collector with a center two-way left-turn lane per the *Midway-Pacific Highway Community Plan*. A raised median and Class II bile lanes are provided along Barnett Avenue between Truxtun Road and Henderson Avenue. On-Street parking is prohibited on both sides of the roadway. The posted speed limit is 40 mph. West of Truxtun Road, Barnett Avenue changes names and becomes Lytton Street.

Hancock Street is classified as a two-lane Collector per the *Midway-Pacific Highway Community Plan*. Class II bike lanes are not provided on either side of the road. On-Street parking is permitted on both sides of the roadway; parallel parking on the north side and diagonal parking on the south side. West of Noell Street, Hancock transitions from a two-lane, two-way street to a one-way (eastbound), two-way street. The posted speed limit is 30 mph.

Washington Street is classified as four-lane Major Arterial between Frontage Road and Hancock Street per the *Midway-Pacific Highway Community Plan*. North of India Street, Washington Street is classified as 4-lane Prime Arterial per the *Uptown Community Plan.* Class II bike lanes are provided on portions of Washington Street north of India Street. On-Street parking is generally not permitted with the exception of along a small segment between San Diego Avenue and just north of India Street. South of India Street he posted speed limit is 25 mph. No posted speed limit signs were observed north of India Street.

4.2 Existing Traffic Volumes

This section presents a summary of the existing traffic volumes obtained for the various facilities in the Proposed Action study area. ***Figure 4–2*** shows the existing traffic volumes at study area locations.

Existing weekday daily traffic counts and a.m. (7:00–9:00 a.m.) and p.m. (4:00–6:00 p.m.) peak hour traffic volume counts were collected at the study area intersections and street segments in January 2020. ***Appendix C*** contains the manual intersection and street segment count sheets and the signal timing plans.

Existing Freeway traffic volumes were obtained from the most recent *Caltrans 2017 Volumes on California State Highways*. Counts at the analyzed ramp meters were obtained from the *Freeway Performance Measurement System* (PeMS) during the month of September 2019. Ramp metering information was obtained from Caltrans and is included in *Appendix B*.

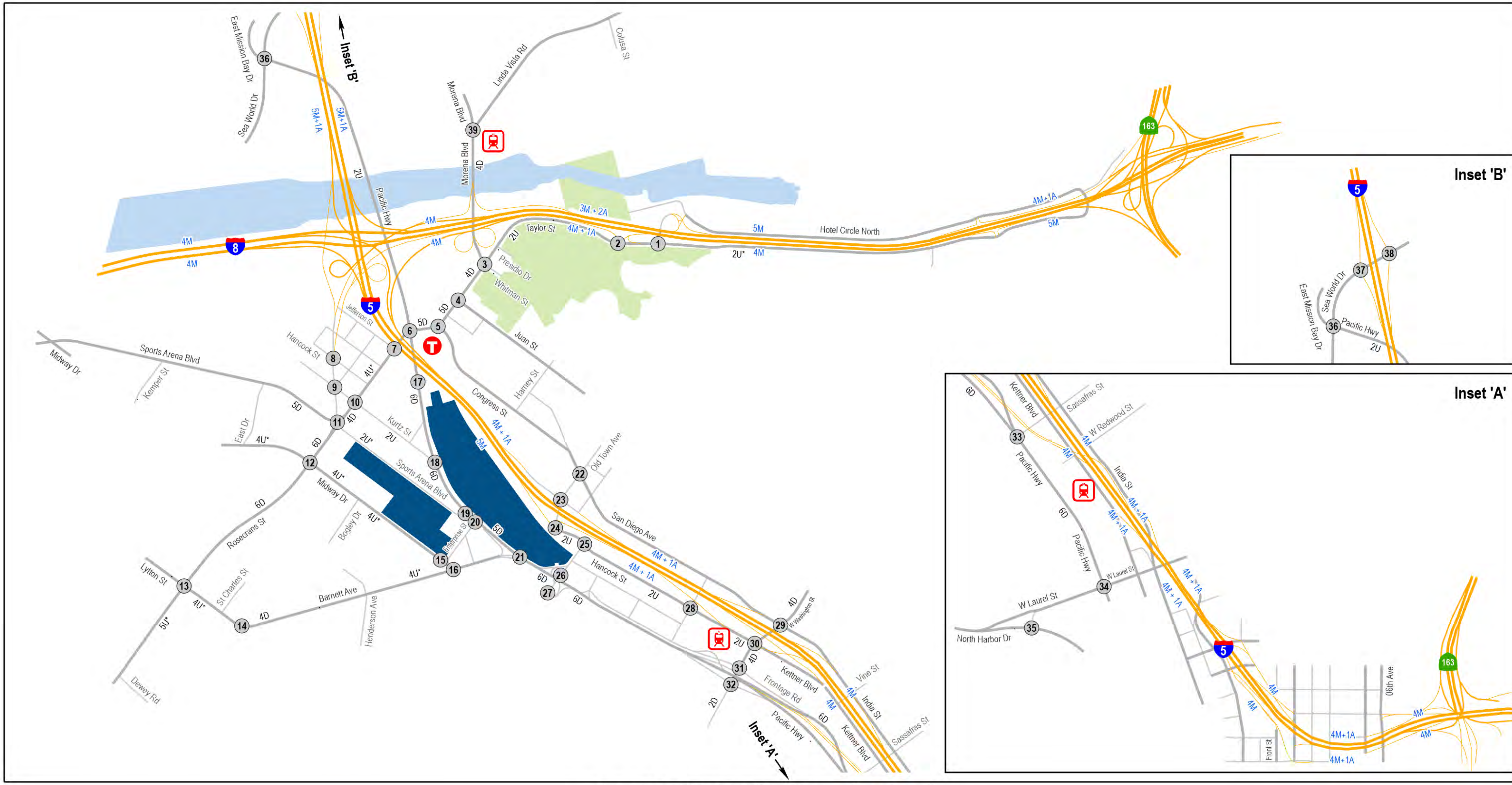


Figure 4-1 Existing Conditions Diagram (Page 1 of 2)

Symbol	Meaning
#	Study Intersection
	Project Site
	Parks
	Wetlands
2/4/6	Number of travel lanes
M/A	Mainline / Auxiliary lane
*	Two-Way Left Turn median
U/D	Divided / Undivided
T	Old Town Transit Center
	Trolley Station

0 0.35 0.7 Miles

Figure 4-1 Existing Conditions Diagram (Page 2 of 2)

- Traffic signal
- Stop sign
- Lane configuration
- Right-Turn Overlap

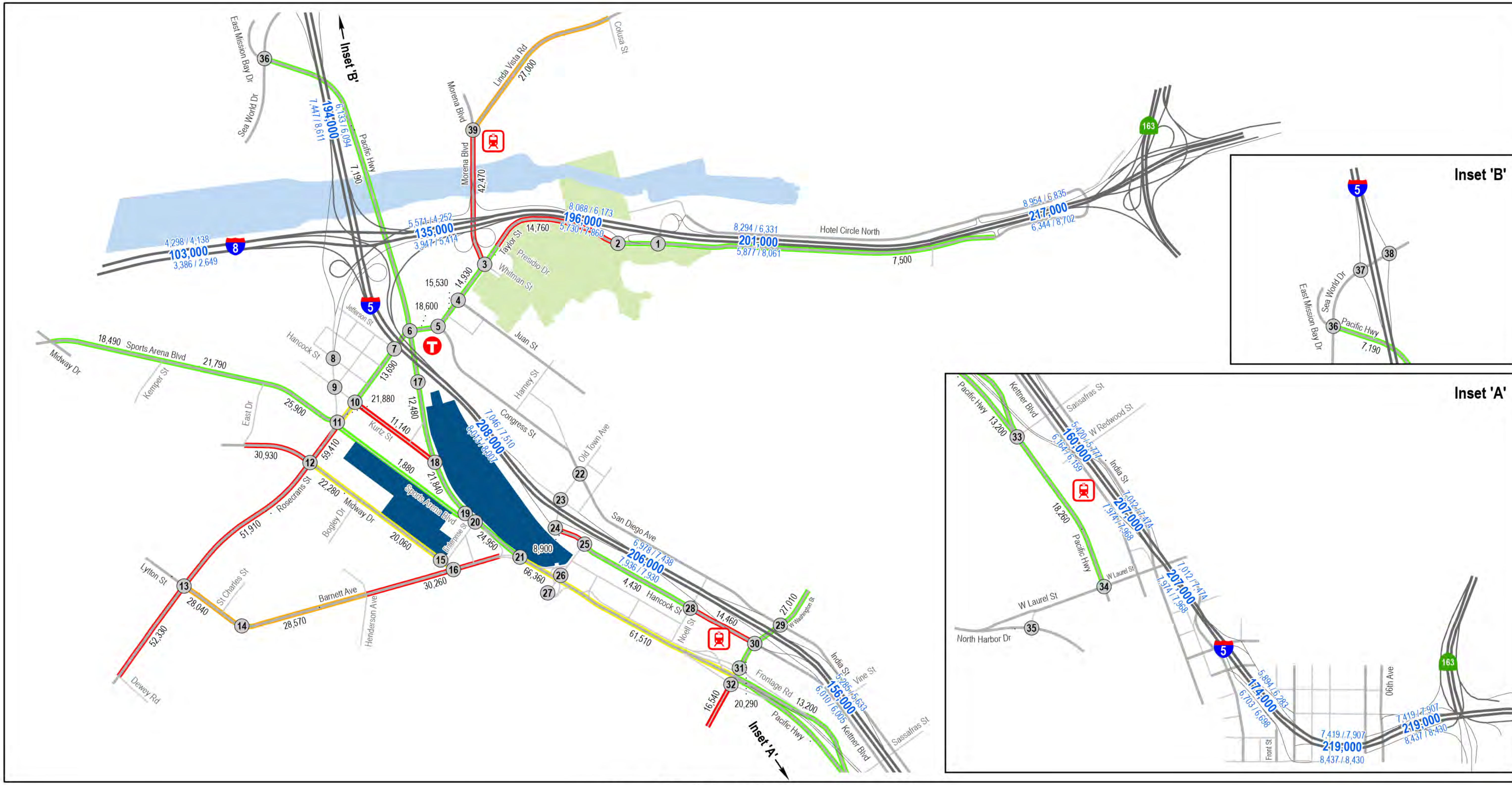
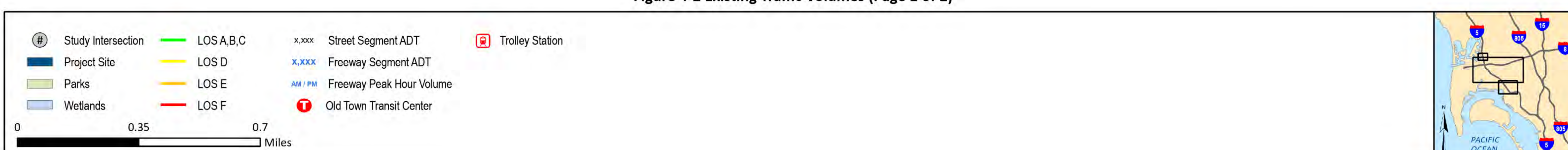


Figure 4-2 Existing Traffic Volumes (Page 1 of 2)



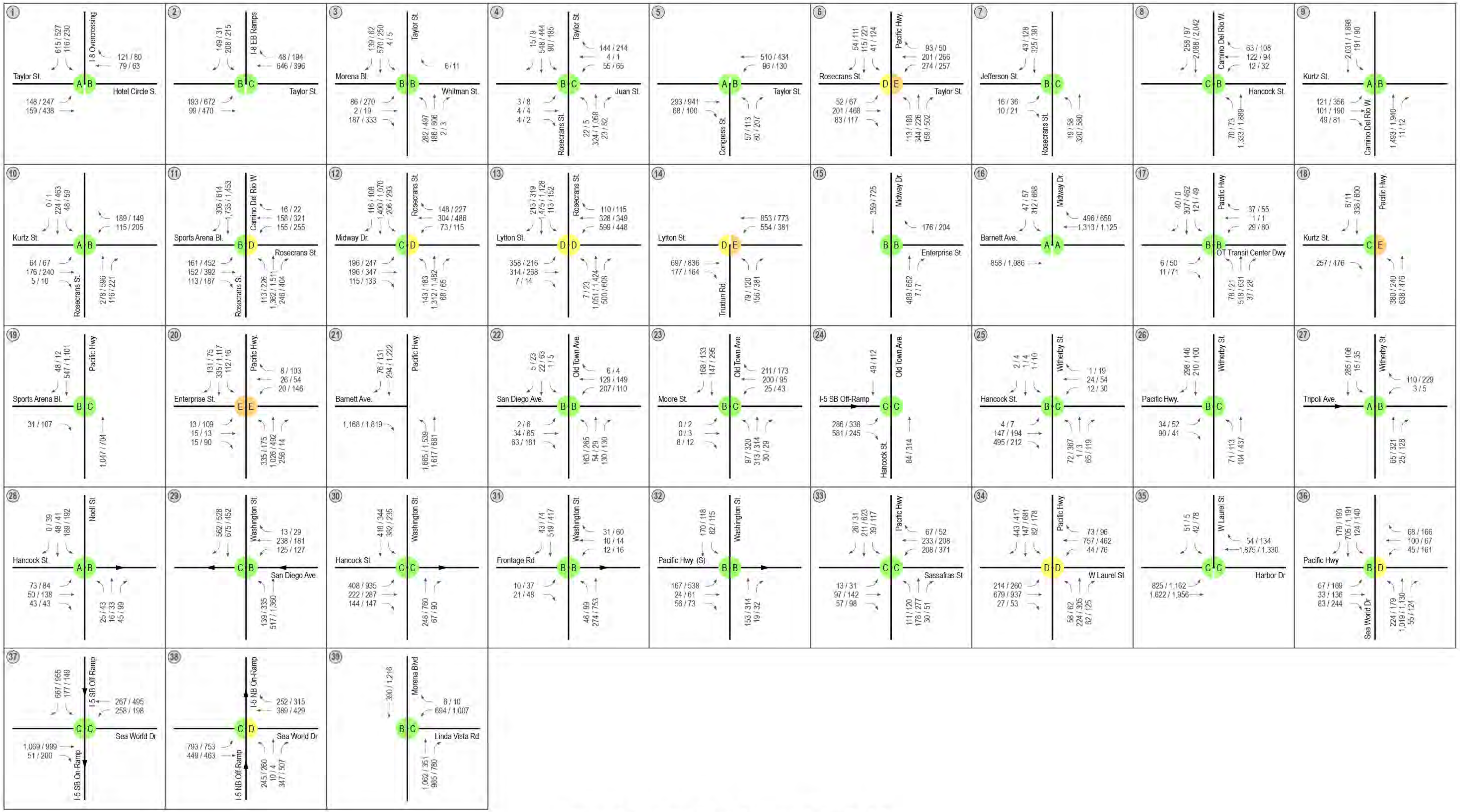


Figure 4-2 Existing Traffic Volumes (Page 2 of 2)

Study Intersections
Intersection AM/PM Peak Hour Volumes
LOS AM
LOS PM
LOS A,B,C
LOS D
LOS E
LOS F

5.0 SIGNIFICANCE CRITERIA

For the purposes of this transportation impact study, City of San Diego significant criteria for level of service (LOS) operations was utilized. According to the City of San Diego's *Significance Determination Thresholds* dated July 2016, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. The City defined thresholds are shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

For the cumulative impact analysis presented in this report, the Year 2050 analysis represents the cumulative condition when the Proposed Action alternatives would be fully operational over the buildout ambient traffic conditions. Direct impacts from the Proposed Action alternatives were evaluated assuming the most intensive development that would be expected to occur within a 10-year timeframe, by Year 2030. Approximately 25 percent of Alternative 2 was used in the Year 2030 analysis.

If a Proposed Action alternatives' impacts exceed the thresholds in *Table 5–1*, then the Proposed Action alternative is considered to have a significant "direct" or "cumulative" transportation impact. A significant direct or cumulative impact can also occur if the Proposed Action alternatives cause the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unavoidable.

Table 5–1
City Of San Diego
Traffic Impact Significant Thresholds

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]				
	Freeways		Roadway Segments	Intersections	Ramp Metering[c]
	V/C	Speed (mph)	V/C	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	2.0	2.0
F	0.005	0.5	0.01	1.0	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with a proposed project becomes unacceptable (see note b), or if a project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway on ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and upstream freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and upstream freeway LOS F is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio
4. Speed = Arterial speed measured in miles per hour

6.0 EXISTING ANALYSIS

The analysis of existing conditions includes the assessment of the study area intersections, street segments, metered freeway on-ramps and freeway mainline segments using the methodologies described in *Section 3.3* of this report.

6.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Existing conditions. ***Table 6–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to currently operate at LOS E or F:

- Intersection #6. Pacific Highway/ Rosecrans Street/ Taylor Street – LOS E during the p.m. peak hour
- Intersection #14. Truxtun Road/ Lytton Street/ Barnett Avenue – LOS E during the p.m. peak hour
- Intersection #18. Pacific Highway/ Kurtz Street – LOS E during the p.m. peak hour
- Intersection #20. Pacific Highway/ Enterprise Street – LOS E during the a.m. and p.m. peak hour

Appendix D contains the intersection analysis worksheets for the Existing scenario.

6.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Existing conditions. ***Table 4–2*** reports the Existing daily street segment operations. The following study area roadway segments are calculated to currently operate at LOS E or F:

- Street Segment #1: Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2: Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3: Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #9: Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)
- Street Segment #19: Morena Boulevard: Friars Road to I-8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS E)
- Street Segment #21: Kurtz Street: Rosecrans to Pacific Highway (LOS F)
- Street Segment #26: Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #29: Lytton Street: Rosecrans Street to St. Charles Street (LOS E)
- Street Segment #30: Barnett Avenue: St. Charles Street to Henderson Avenue (LOS E)
- Street Segment #31: Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32: Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #34: Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35: W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)

6.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Existing conditions. ***Table 4–3*** report the Existing freeway segment operations. The following freeway segments are calculated to currently operate at LOS E or F:

- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E during the a.m. peak hour)
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor St, WB (LOS E during the a.m. peak hour)
- Freeway Segment #14. I-8: Taylor Street to Hotel Circle, EB (LOS E during the p.m. peak hour)
- Freeway Segment #15. I-8: Hotel Circle to SR-163, EB (LOS F during the p.m. peak hour)

Appendix F contains detailed calculation sheets for the Existing conditions.

6.4 Peak Hour Ramp Meter Operations

Metered On-Ramp analysis was conducted under Existing conditions. ***Table 4–4*** reports the Existing per lane ramp meter operations including the delays and queues and ***Table 4–5*** summarizes the observed maximum queue and delay at each ramp. The calculations shown in the table are per lane. The total on-ramp volume is divided by the number of lanes on the On-Ramp. The calculations assume the *most restrictive* discharge rates obtained from the Caltrans, during the a.m. peak hour of 7:30 a.m. to 8:30 a.m. and p.m. peak hour of 4:30 p.m. to 5:30 p.m. The following summarizes the existing metered ramp operations:

- Ramp Meter #1. Moore Street/ NB I-5 On-Ramp – No delays or queues were calculated at the *Moore Street / NB I-5 On-Ramp* during the a.m. peak hour, and a queue of 64 vehicles and a delay of 12 minutes was calculated during the p.m. peak hour.

  <u>Field observations</u> at this on-ramp indicate maximum queues of three vehicles corresponding to a delay of 0.2 minutes during the a.m. peak hour and maximum queues of two vehicles corresponding to a delay of 0.4 minutes during the p.m. peak hour.

As shown in *Section 6.3* above, the freeway mainline segment downstream of this metered on-ramp is calculated to operate at an acceptable LOS D or better. Therefore, this on-ramp is expected to operate at an acceptable delay under Existing conditions.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing Delay [a]	Existing LOS [b]
1. Taylor St/ Hotel Circle South	AWSC [c]	AM PM	9.9 14.5	A B
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	13.9 22.1	B C
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	14.2 12.1	B B
4. Taylor St/ Juan St	Signal	AM PM	11.9 28.8	B C
5. Congress St/ Taylor St	Signal	AM PM	7.0 13.2	A B
6. Pacific Hwy/ Rosecrans St/Taylor St	Signal	AM PM	38.4 60.0	D E
7. Rosecrans St/ Jefferson St	TWSC [d]	AM PM	14.9 19.0	B C
8. Camino Del Rio W/ Hancock St	Signal	AM PM	26.6 13.6	C B
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	7.2 10.1	A B
10. Rosecrans St/ Kurtz St	Signal	AM PM	9.6 19.5	A B
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	13.6 41.5	B D
12. Rosecrans St/ Midway Dr	Signal	AM PM	33.9 47.5	C D
13. Rosecrans St/ Lytton St	Signal	AM PM	46.1 52.9	D D
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	36.4 67.2	D E
15. Midway Dr/ Enterprise St	Signal	AM PM	12.6 13.7	B B
16. Barnett Ave/ Midway Dr	Signal	AM PM	7.7 9.2	A A

(Continued on Next Page)

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing Delay [a]	Existing LOS [b]
(Continued from Previous Page)				
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	10.8 10.2	B B
18. Pacific Hwy/ Kurtz St	Signal	AM PM	15.8 48.8	C E
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	11.2 16.0	B C
20. Pacific Hwy/ Enterprise St	Signal	AM PM	67.4 67.2	E E
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*	
22. Old Town Ave/ San Diego Ave	Signal	AM PM	10.5 10.2	B B
23. Old Town Ave/ Moore St	Signal	AM PM	17.2 23.6	B C
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	19.4 16.1	C C
25. Witherby St/ Hancock St	AWSC	AM PM	13.2 17.7	B C
26. Witherby St/ Pacific Hwy	AWSC	AM PM	12.1 23.2	B C
27. Tripoli Ave/ Witherby St	AWSC	AM PM	9.7 12.4	A B
28. Noell St/ Hancock St	AWSC	AM PM	9.2 11.1	A B
29. Washington St/ San Diego Ave	Signal	AM PM	22.9 12.6	C B
30. Washington St/ Hancock St	Signal	AM PM	23.9 26.0	C C
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	11.4 14.3	B B
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	11.7 12.6	B B
(Continued on Next Page)				

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing Delay [a]	Existing LOS [b]
(Continued from Previous Page)				
33. Pacific Hwy/ Sassafras St	Signal	AM	23.5	C
		PM	34.9	C
34. Pacific Hwy / Laurel St	Signal	AM	45.4	D
		PM	47.3	D
35. Harbor Dr / Laurel St	Signal	AM	27.5	C
		PM	30.0	C
36. Pacific Hwy / Sea World Dr	Signal	AM	18.5	B
		PM	40.3	D
37. Sea World Dr / I-5 SB Ramps	Signal	AM	21.2	C
		PM	23.2	C
38. Sea World Dr / I-5 NB Ramps	Signal	AM	33.3	C
		PM	48.8	D
39. Morena Blvd / Linda Vista Rd	Signal	AM	16.2	B
		PM	22.8	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. All-Way Stop Control. Average delay reported.
d. Two-Way Stop Control. Worst critical movement delay reported.

SIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS	UNSIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6–2
EXISTING SEGMENT OPERATIONS

	Segment	Functional Classification [a]	LOS E [b] Capacity	Volume [c]	LOS [d]	V/C [e]
	Rosecrans Street					
1.	Dewey Rd to Lytton St	5-Lane Collector (TWLTL)	37,500	52,330	F	1.395
2.	Lytton St to Midway Dr	6-Lane Major	50,000	51,905	F	1.038
3.	Midway Dr to Sports Arena Blvd	6-Lane Major	50,000	59,414	F	1.188
4.	Sports Arena Blvd to Kurtz St	4-Lane Collector (TWLTL)	30,000	21,875	D	0.729
5.	E: Kurtz St to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	13,689	B	0.456
	Taylor Street					
6.	Pacific Hwy to Congress St	5-Lane Major (Raised Median)	45,000	18,603	B	0.413
7.	Congress St to Juan St	5-Lane Major (Raised Median)	45,000	15,530	A	0.345
8.	Juan St to Presidio Dr	4-Lane Major (Raised Median)	40,000	14,928	A	0.373
9.	Presidio Dr to I-8 East Ramp	2-Lane Collector	10,000	14,757	F	1.476
	Hotel Circle S.					
10.	I-8 East Ramp to Bachman Pl	2-Lane Collector (TWLTL)	15,000	7,504	C	0.500
	Pacific Highway					
11.	SeaWorld Dr to Taylor St	2-Lane Collector (TWLTL)	15,000	7,190	C	0.479
12.	Taylor St to Kurtz St	6-Lane Major (Raised Median)	50,000	12,480	A	0.250
13.	Kurtz St to Sports Arena Blvd	6-Lane Major (Raised Median)	50,000	21,839	B	0.437
14.	Sports Arena Blvd to Barnett Ave	5-Lane Prime Arterial	50,000	24,952	B	0.499
15.	Barnett Ave to Witherby St	Expressway	80,000	66,358	D	0.829
16.	Witherby St to W. Washington St	Expressway	80,000	61,513	D	0.769
17.	W. Washigton St to Sassafras St	6-Lane Prime Arterial	60,000	13,198	A	0.220
18.	Sassafras St to W. Laurel St	6-Lane Major (Raised Median)	50,000	18,261	A	0.365
	Morena Boulevard					
19.	Friars Rd to I-8	4-Lane Major (Raised Median)	40,000	42,465	F	1.062
	Linda Vista Road					
20.	Morena Blvd to Colusa St	4-Lane Collector (TWLTL)	30,000	27,000	E	0.900
	Kurtz Street					
21.	Rosecrans to Pacific Hwy	2-Lane Collector (WP)	8,000	11,142	F	1.393

(Continued on Next Page)

TABLE 6–2
EXISTING SEGMENT OPERATIONS

	Segment	Functional Classification [a]	LOS E [b] Capacity	Volume [c]	LOS [d]	V/C [e]
	(Continued from Previous Page)					
	Sports Arena Blvd					
22.	Point Loma Bl/Midway Dr to Kemper St	5-Lane Collector (TWLTL)	37,500	18,490	C	0.493
23.	Kemper St to East Dr	5-Lane Major (Raised Median)	45,000	21,790	B	0.484
24.	East Dr to Rosecrans St	5-Lane Major (Raised Median)	45,000	25,900	C	0.576
25.	Rosecrans St to Enterprise St	2-Lane Collector (WP)	8,000	1,877	A	0.235
	Midway Drive					
26.	East Dr to Rosecrans St	4-Lane Collector (TWLTL)	30,000	30,934	F	1.031
27.	Rosecrans St to Bogley Dr	4-Lane Collector (TWLTL)	30,000	22,283	D	0.743
28.	Bogley Dr to Barnett Ave	4-Lane Collector (TWLTL)	30,000	20,056	D	0.669
	Lytton Street					
29.	Rosecrans St to St. Charles St	4-Lane Collector (TWLTL)	30,000	28,042	E	0.935
	Barnett Avenue					
30.	St. Charles St to Henderson Ave	4-Lane Collector (Raised Median)	30,000	28,568	E	0.952
31.	Henderson Ave to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	30,263	F	1.009
	Hancock Street					
32.	Old Town Ave to Witherby St	2-Lane Collector (WP)	8,000	8,903	F	1.113
33.	Witherby St to Noell St	2-Lane Collector (WP)	8,000	4,428	C	0.554
34.	Noell St to W. Washington St	2-Lane Collector (WP)	8,000	14,457	F	1.807
	W. Washington Street					
35.	Admiral Boland Way to Pacific Hwy	2-Lane Collector	8,000	16,542	F	2.068
36.	Pacific Hwy to Hancock St	4-Lane Major (Raised Median)	40,000	20,289	B	0.507
37.	Hancock St to W. University Ave	4-Lane Major (Raised Median)	40,000	27,007	C	0.675

Footnotes:
a. The City of San Diego roadway classification at which the roadway currently functions.
b. The capacity of the roadway at Level of Service E.
c. Existing daily segment volumes from *Table 3–3*.
d. Level of Service.
e. The Volume to Capacity ratio.

TABLE 6–3
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	Volume [b]	K [c]		D [c]		Truck Factor	Peak Hour Volume [c]		Flow Rate (pc/h/ln) [d]		Adjusted Capacity (pc/h/ln) [e]	V/C [f]		Density [g]		LOS [h]	
				AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5																			
1. Sea World to I-8	NB	5 Main + 1 Aux	194,000	0.0700	0.0758	0.4516	0.4144	3.4%	6,133	6,094	1,124	1,117	2,160	0.520	0.517	18.3	18.2	C	C
	SB	5 Main + 1 Aux		0.0700	0.0758	0.5484	0.5856	3.4%	7,447	8,611	1,366	1,579	2,160	0.632	0.731	22.2	26.1	C	D
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	208,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,046	7,510	1,560	1,663	2,133	0.731	0.780	25.8	28.1	C	D
	SB	5 Main		0.0724	0.0746	0.5321	0.5160	4.1%	8,013	8,007	1,774	1,773	2,245	0.790	0.790	29.7	29.6	D	D
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	206,000	0.0724	0.0746	0.4679	0.4840	4.1%	6,978	7,438	1,545	1,647	2,130	0.725	0.773	25.6	27.9	C	D
	SB	4 Main + 1 Aux		0.0724	0.0746	0.5321	0.5160	4.1%	7,936	7,930	1,757	1,756	2,133	0.824	0.823	30.6	30.5	D	D
4. Washington St to Sassafras St	NB	4 Main	156,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,285	5,633	1,463	1,559	2,237	0.654	0.697	23.9	25.6	C	C
	SB	4 Main		0.0724	0.0746	0.5321	0.5160	4.1%	6,010	6,005	1,663	1,662	2,245	0.741	0.740	27.3	27.3	D	D
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	160,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,420	5,777	1,500	1,599	2,237	0.671	0.715	24.5	26.3	C	D
	SB	4 Main		0.0724	0.0746	0.5321	0.5160	4.1%	6,164	6,159	1,706	1,704	2,241	0.761	0.760	28.3	28.3	D	D
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,012	7,474	1,552	1,655	2,126	0.730	0.778	25.9	28.2	C	D
	SB	4 Main + 1 Aux		0.0724	0.0746	0.5321	0.5160	4.1%	7,974	7,968	1,765	1,764	2,130	0.829	0.828	30.9	30.9	D	D
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	207,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,012	7,474	1,552	1,655	2,119	0.732	0.781	26.2	28.4	D	D
	SB	4 Main + 1 Aux		0.0724	0.0746	0.5321	0.5160	4.1%	7,974	7,968	1,765	1,764	2,112	0.836	0.835	31.5	31.5	D	D
8. Hawthorn St to 1st Ave	NB	4 Main	174,000	0.0724	0.0746	0.4679	0.4840	4.1%	5,894	6,283	1,631	1,739	2,216	0.736	0.785	27.8	29.9	D	D
	SB	4 Main		0.0724	0.0746	0.5321	0.5160	4.1%	6,703	6,698	1,855	1,845	2,220	0.836	0.835	32.5	32.5	D	D
9. 1st Ave to 6th Ave	NB	5 Main	219,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,419	7,907	1,643	1,751	2,216	0.741	0.790	28.0	30.2	D	D
	SB	5 Main		0.0724	0.0746	0.5321	0.5160	4.1%	8,437	8,430	1,868	1,866	2,213	0.844	0.843	33.1	33.0	D	D

TABLE 6–3
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	Volume [b]	K [c]		D [c]		Truck Factor	Peak Hour Volume [c]		Flow Rate (pc/h/ln) [d]		Adjusted Capacity (pc/h/ln) [e]	V/C [f]		Density [g]		LOS [h]	
				AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
10. 6th Ave to SR-163	NB	5 Main	219,000	0.0724	0.0746	0.4679	0.4840	4.1%	7,419	7,907	1,643	1,751	2,216	0.741	0.790	28.0	30.2	D	D
	SB	5 Main		0.0724	0.0746	0.5321	0.5160	4.1%	8,437	8,430	1,868	1,866	2,216	0.843	0.842	33.0	32.9	D	D
Interstate 8																			
11. W. Mission Bay Dr /Midway Dr to I-5	EB	4 Main	103,000	0.0746	0.0659	0.4407	0.3903	2.8%	3,386	2,649	926	725	2,248	0.412	0.323	14.9	11.6	B	B
	WB	4 Main		0.0746	0.0659	0.5593	0.6097	2.8%	4,298	4,138	1,175	1,131	2,259	0.520	0.501	18.5	17.8	C	B
12. I-5 to Morena Blvd	EB	4 Main	135,000	0.0705	0.0716	0.4147	0.5601	2.8%	3,947	5,414	1,079	1,480	2,241	0.481	0.660	17.5	24.1	B	C
	WB	3 Main		0.0705	0.0716	0.5853	0.4399	2.8%	5,571	4,252	2,030	1,550	2,248	0.903	0.690	36.6	25.0	E	C
13. Morena Blvd to Hotel Circle /Taylor St	EB	4 Main + 1 Aux	196,000	0.0705	0.0716	0.4147	0.5601	2.8%	5,730	7,860	1,253	1,719	2,126	0.589	0.809	20.5	29.8	C	D
	WB	5 Main		0.0705	0.0716	0.5853	0.4399	2.8%	8,088	6,173	1,769	1,350	1,948	0.908	0.693	35.3	22.5	E	C
14. Taylor St to Hotel Circle	EB	4 Main	201,000	0.0705	0.0716	0.4147	0.5601	2.8%	5,877	8,061	1,606	2,203	2,229	0.721	0.988	26.8	43.8	D	E
	WB	5 Main		0.0705	0.0716	0.5853	0.4399	2.8%	8,294	6,331	1,814	1,384	2,237	0.811	0.619	30.9	22.7	D	C
15. Hotel Circle to SR-163	EB	4 Main	217,000	0.0705	0.0716	0.4147	0.5601	2.7%	6,344	8,702	1,732	2,376	2,229	0.777	1.066	29.3	—	D	F
	WB	5 Main		0.0705	0.0716	0.5853	0.4399	2.7%	8,954	6,835	1,956	1,493	2,229	0.878	0.670	34.9	24.8	D	C

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. Existing ADT volumes from most recent Caltrans Traffic Census Program (2017) and grown to Year 2019 using five years of historical Caltrans data.
c. Peak hour volumes calculated from K and D factors provided in most recent Caltrans Traffic Census Program Peak Hour Volume Data (2016).
d. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
e. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
f. V/C = (Peak Hour Volume/Hourly Capacity)
g. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
h. LOS = Level of Service

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. Main = Mainline
2. Aux = Auxiliary
3. Truck factor sourced to most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2016).
4. "—" density exceeds the maximum threshold for LOS F.

TABLE 6–4
EXISTING METERED ON-RAMP OPERATIONS

ocation / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Existing - Calculated							2 SOV
	AM	242	335	0	0	0	0
	PM	382	318	64	12	1,588	64

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane

TABLE 6–5
FIELD OBSERVED METERED ON-RAMP MAXIMUM QUEUE AND DELAY

Ramp	Peak Hour	Lane 1		Lane 2	
		Queue (Vehicles)	Delay (Minutes)	Queue (Vehicles)	Delay (Minutes)
1. Moore Street / NB I-5 On-Ramp					
Existing – Field Observation					2 SOV
	AM	3	0.2	2	0.2
	PM	2	0.3	2	0.4

General Note:

1. Higher of the delay / queue is reported in the text.

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following five Proposed Action alternatives were considered for the purposes of trip generation, distribution and assignment:

- Alternative 1: Navy Recapitalization at OTC
- Alternative 2: Higher-density Mixed-use Revitalization
- Alternative 3: Lower-density Mixed-use Revitalization
- Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center
- Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center
- Alternative 2: Higher-density Mixed-use Revitalization assumed 25% development for Year 2030

Each Proposed Action alternative consists of a mix of various land uses. ***Table 7–1*** is a breakdown of the land uses and densities for each alternative that were then used in the trip generation calculations.

TABLE 7–1
PROPOSED ACTION ALTERNATIVE LAND USES AND DENSITIES

Land Use	Unit	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Navy Recapitalization	KSF	1,876	1,064	1,064	1,064	4,064
Multi-family Residential	DU	NA	6,600	4,400	10,000	8,000
Community Retail	KSF	NA	180	130	250	200
Commercial Office	KSF	NA	1,000	650	1,350	850
Hotel	Rooms	NA	400	250	450	450
Transit Center		No	No	No	Yes	Yes

General Notes:

1. KSF=1,000 Square Feet. DU=Dwelling Unit. NA=Not Applicable
2. Additional land use square footage details included earlier in this report in Table 2–1.
3. For the Year 2030 analysis, 25% of Alternative 2 was assumed.

7.1 Trip Generation

7.1.1 *Trip Rates*

The trip generation rates for the Proposed Action alternatives were based on the City of San Diego *Trip Generation Manual (May 2003).* The City has separate trip rates for "cumulative" trips and "driveway" trips. The City defines cumulative trips as new trips to the street system (akin to "primary" trips in the nationally published Institute of Transportation Engineers (ITE) *Trip*

Generation Manual, 10th edition. Driveway trips are the combination of cumulative trips and pass-by/diverted trips. Further explanation of these trip types is provided below.

Cumulative (Primary) Trips

Development of new land uses will create trips on a street system that are new, or "cumulative" trips. However, several types of retail/commercial developments experience local and regional trips at the driveways that are already on the street system whether that development exists or not. These trips are known as "pass-by" or "diverted link" trips.

Pass-by trips are trips that are already on the street system passing along the site frontage (Pacific Highway, Sports Arena Boulevard, and Midway Drive), and only appear as new trips in and out of the site driveways.

Diverted Link trips are trips that have deviated from a roadway within the vicinity of the development to access the site. The roadway from which the trip is diverted could include streets or freeways that are adjacent to the development, but without direct access to the development (Pacific Highway, Sports Arena Boulevard, Midway Drive, Old Town Avenue, I-5, and Witherby Street).

Driveway Trips

Driveway trips are all trips that occur at the driveways to a development. They are the combination of the three trip types described above: cumulative, pass-by and diverted link trips. It should be noted that given the site plan for the OTC Site is currently conceptual, the actual location of driveways is currently unknown. Regardless, driveway trips were assigned to within close proximity to the OTC Site frontage.

Each land use for the Proposed Action alternatives was compared to the City's trip rates and the appropriate rates were assigned.

7.1.2 *Trip Reductions*

With the development of the Proposed Actions alternatives 2 through 5, redevelopment of the site would occur that reduces the existing footprint and square footages of the Navy operations. In addition, the mix-use nature of the land uses and the OTC Site being located within a TPA qualifies the Proposed Action alternatives for additional trip credits. These redcutions are described in further detail below.

For Proposed Action alternatives 2 through 5, three driveway trip reductions were applied.

1) Navy Square Footage Decrease Reduction: This reduction accounts for the Navy square footage decreasing from 1,683,384 SF to 1,064,268 SF.

2) Transit, Bicycle, and Pedestrian Reduction: This reduction accounts for non-motorized trips occurring to and from the site. While the current 1998 *Traffic Impact Study Manual (TISM)* contains trip reductions for developments near transit stations, the draft 2020 *Transportation*

Study Manual (TSM) contains trip reductions for developments to account for transit, bicycle, and pedestrians in transit priority areas (TPA). Proposed Action alternatives 2 and 3 are located in close proximity to the Old Town Transit Station and Proposed Action alternatives 4 and 5 would have a transit station within the OTC Site. ***Table 7–2*** tabulates the reductions from the draft 2020 *TSM*, which were adjusted and applied as further described below.

TABLE 7–2
REDUCTIONS TO ACCOUNT FOR TRANSIT, BICYCLE AND PEDESTRIAN USE IN TPAS

Land Use Type	Daily	AM	PM
Residential	10%	14%	14%
Employment	4%	15%	15%
Retail	Not Applicable	Not Applicable	Not Applicable

Source: Table 1 of the City of San Diego's draft *Transportation Study Manual (2020)*

As part of the trip generation calculations, the residential percentage reductions were applied to the daily/AM/PM trips for the multi-family residential land use of Proposed Action alternatives and the employment percentage reductions were applied to the daily/AM/PM trips for the commercial office land use of the Proposed Action alternatives. The following additional calculation assumptions were utilized:

a) Only ¼ of the reductions were utilized for Proposed Action alternatives 2 and 3 on the basis that approximately ¼ of the Proposed Action alternative would be within ½ mile walking distance of the existing Old Town Transit Station. It should be noted that a majority of Proposed Action alternatives 2 and 3 are located within a TPA per the City of San Diego Transit Priority Area Map, however the ¼ factor was applied to be conservative. The full reductions were utilized for Proposed Action alternatives 4 and 5 on the basis that a transit station would be located within the site.

b) The hotel land use is not included in *Table 8–2* but a portion of those trips will utilize transit, walk or bike options. Since there are no reductions specified for this land use, the employment reduction of 4% per *Table 8–2* was applied to the daily hotel trips. To be conservative, 5% was utilized for the AM and PM hotel trips, ⅓ of the "Employment" category percentage. This 5% is recommended in the SANDAG's *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*.

3) Mixed-Use Reductions: This reduction accounts for the internal trips that would occur due to the mix of land uses within the same site. The percentages found in the 1998 *TISM* were utilized. ***Table 7–3*** tabulates these reductions. It should be noted that the draft 2020 *TSM* describes a methodology by the National Cooperative Highway Research Program which was not utilized because it would require several assumptions to be made, such as vehicle occupancy, percent of transit entering/exiting, the percent of non-motorized trips entering/exiting, and requires as a detailed site plan (which is not available) to measure the distances between the land uses.

TABLE 7–3
REDUCTIONS FOR MIXED-USE DEVELOPMENTS

Land Use Type	Daily	AM	PM
Residential	10%	8%	10%
Industrial	4%	5%	5%
Commercial Office	3%	5%	45
Commercial Retail	*	*	*

Source: Table 4 of the City of San Diego's *Traffic Impact Study Manual* (1998).
*The commercial retail reduction equals the sum of the total mixed-use reduction in residential, industrial and commercial office.

As part of the trip generation calculations, the residential percentage reductions were applied to the daily/AM/PM trips for the multi-family residential land use of the Proposed Action alternatives and the commercial office percentage reductions were applied to the daily/AM/PM trips for the commercial office land use of the Proposed Action alternatives.

Although the 1998 *TISM* indicates to utilize the sum of the reduced trips for the residential and commercial office land uses to calculate commercial retail land use reduction, only a 50% factor was utilized to be conservative.

7.1.3 *Trip Generation Summary*

Table 7–4 shows a summary of the total trip generation for Alternative 1: Navy Recapitalization at OTC. As seen in *Table 7–4*, this alternative is calculated to generate approximately 800 ADT with 65 inbound / 7 outbound trips during the a.m. peak hour and 8 inbound / 72 outbound trips during the p.m. peak hour.

Table 7–5 shows a summary of the total trip generation for Alternative 2: Higher-density Mixed-use Revitalization. As seen in *Table 7–5*, the approximate amount of cumulative trips generated by this Proposed Action alternative is 51,946 ADT with 1,583 inbound / 2,472 outbound trips during the a.m. peak hour and 2,909 inbound / 2,150 outbound trips during the p.m. peak hour. The approximate amount of driveway trips generated by this Proposed Action alternative is 55,726 ADT with 1,651 inbound / 2,517 outbound trips during the a.m. peak hour and 3,098 inbound / 2,339 outbound trips during the p.m. peak hour.

Table 7–6 shows a summary of the total trip generation for Alternative 3: Lower-density Mixed-use Revitalization. As seen in *Table 7–6*, the approximate amount of cumulative trips generated by this Proposed Action alternative is 34,592 ADT with 1,044 inbound / 1,648 outbound trips during the a.m. peak hour and 1,959 inbound/ 1,429 outbound trips during the p.m. peak hour. The approximate amount of driveway trips generated by this Proposed Action alternative is 37,322 ADT with 1,093 inbound / 1,681 outbound trips during the a.m. peak hour and 2,095 inbound / 1,566 outbound trips during the p.m. peak hour.

Table 7–7 shows a summary of the total trip generation for Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center. As seen in *Table 7–7*, the approximate amount of cumulative trips generated by this Proposed Action alternative is 70,022 ADT with 1,904 inbound / 3,253 outbound trips during the a.m. peak hour and 3,786 inbound / 2,690 outbound trips during the p.m. peak hour. The approximate amount of driveway trips generated by this Proposed Action alternative is 75,272 ADT with 1,998 inbound / 3,316 outbound trips during the a.m. peak hour and 4,048 inbound / 2,953 outbound trips during the p.m. peak hour.

Table 7–8 shows a summary of the total trip generation for Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center. As seen in *Table 7–8*, the approximate amount of cumulative trips generated by this Proposed Action alternative is 55,309 ADT with 1,406 inbound / 2,610 outbound trips during the a.m. peak hour and 3,039 inbound / 2,031 outbound trips during the p.m. peak hour. The approximate amount of driveway trips generated by this Proposed Action alternative is 59,509 ADT with 1,482 inbound / 2,660 outbound trips during the a.m. peak hour and 3,249 inbound / 2,241 outbound trips during the p.m. peak hour.

Table 7–9 shows a summary of the total trip generation used in the Near-Term Year 2030 analysis for 25 percent of Alterative 2: Higher-density Mixed-use Revitalization. As seen in *Table 7–9*, the approximate amount of cumulative trips generated by this Proposed Action alternative is 11,951 ADT with 338 inbound / 612 outbound trips during the a.m. peak hour and 732 inbound / 461 outbound trips during the p.m. peak hour. The approximate amount of driveway trips generated by this Proposed Action alternative is 12,896 ADT with 355 inbound / 624 outbound trips during the a.m. peak hour and 779 inbound / 508 outbound trips during the p.m. peak hour.

Lastly, for the relocation of the transit center onto the site under Alternatives 4 and 5, the existing trips generated by the OTTC were rerouted to the OTC Site with added growth to arrive at Year 2050 OTTC trip generation. Per the SANDAG model runs prepared for the Project, the OTTC is expected to generate 3,200 ADT in Year 2050 that was included separately in Alternatives 4 and 5.

TABLE 7–4
ALTERNATIVE 1: NAVY RECAPITALIZATION AT OTC
TRIP GENERATION

Land Use	Daily Trip Ends (ADT)[a]	AM Peak Hour					PM Peak Hour				
		% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
				In	Out	Total			In	Out	Total
Proposed Land Uses											
Navy Revitalization	800[b]	9%	90 : 10	65	7	72	10%	10 : 90	8	72	80

General Notes:
1. ADT-Average Daily Traffic

Footnotes:
a. Trip ends are one-way traffic movements, either entering or leaving.
b. 7,000 ADT is existing. An 11% increase is square footage is proposed (1,683,384 SF is existing and 1,876,593 SF is proposed.)

TABLE 7–5
ALTERNATIVE 2: HIGHER-DENSITY MIXED-USE REVITALIZATION
TRIP GENERATION

ID	Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
			Rate[b]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
	Proposed Land Uses													
A	Multi-family Residential	6,600 DU	6 /DU	39,600	8%	20:80	634	2,534	3,168	9%	70:30	2,495	1,069	3,564
B	Community Retail (Driveway)	180 KSF	70 /KSF	12,600	3%	60:40	227	151	378	10%	50:50	630	630	1,260
C	Community Retail (Cumulative)	180 KSF	49 /KSF	8,820	3%	60:40	159	106	265	10%	50:50	441	441	882
—	*Pass-by/Diverted Link Trips (B – C)*			*3,780*	—	—	*68*	*45*	*113*	—	—	*189*	*189*	*378*
D	Commercial Office	1,000 KSF	LN Formula	9,626	13%	90:10	1,126	125	1,251	14%	20:80	270	1,078	1,348
E	Hotel	400 Rooms	10 /Room	4,000	6%	60:40	144	96	240	8%	60:40	192	128	320
F	*Subtotal Proposed Driveway (A+B+D+E)*			*65,826*	—		*2,131*	*2,906*	*5,037*	—		*3,587*	*2,905*	*6,492*
G	*Subtotal Proposed Cumulative (A+C+D+E)*			*62,046*	—		*2,063*	*2,861*	*4,924*	—		*3,398*	*2,716*	*6,114*
	Reductions													
—	Navy Square Footage Decrease[c]	-619.116 KSF	— —	(2,600)	9%	90:10	(211)	(23)	(234)	10%	10:90	(26)	(234)	(260)
—	Transit, Bicycle and Pedestrian Reductions[d,e]		Daily: -1.81%	(1,126)	AM:	-3.27%	(66)	(95)	(161)	PM:	-2.94%	(100)	(80)	(180)
—	Mixed-Use Reductions[f]		Daily: -10.27%	(6,374)	AM:	-9.63%	(203)	(271)	(474)	PM:	-10.06%	(363)	(252)	(615)
H	*Subtotal Reductions*			*(10,100)*	—		*(480)*	*(389)*	*(869)*	—		*(489)*	*(566)*	*(1,055)*
Total Driveway Trips (F+H)				**55,726**	—		**1,651**	**2,517**	**4,168**	—		**3,098**	**2,339**	**5,437**
Total Cumulative Trips (G+H)				**51,946**	—		**1,583**	**2,472**	**4,055**	—		**2,909**	**2,150**	**5,059**

General Notes:

1. ADT-Average Daily Traffic, KSF-1,000 Square Feet, DU-Dwelling Unit, LN-Natural Log
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Cumulative + Pass-By & Diverted Link)
3. Cumulative Trips—net new vehicles added to the network

Footnotes:

a. Trip ends are one-way traffic movements, either entering or leaving.
b. Trip rates obtained from the City of San Diego *Trip Generation Manual.*
c. Navy development square footage decreases from 1,683,384 SF to 1,064,268 SF.
d. Reductions obtained from the draft *City of Transportation Study Manual (TSM).*
e. Utilized 1/4 of the recommended percentage reductions on the basis that approximately 1/4 of the OTC site would be within a ½ mile walking distance of the existing Old Town Transit Station.
f. Reductions obtained from the *City of San Diego Traffic Impact Study Manual.*

TABLE 7–6
ALTERNATIVE 3: LOWER-DENSITY MIXED-USE REVITALIZATION
TRIP GENERATION

ID	Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
			Rate[b]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Proposed Land Uses														
A	Multi-family Residential	4,400 DU	6 /DU	26,400	8%	20:80	422	1,690	2,112	9%	70:30	1,663	713	2,376
B	Community Retail (Driveway)	130 KSF	70 /KSF	9.100	3%	60:40	164	109	273	10%	50:50	455	455	910
C	Community Retail (Cumulative)	130 KSF	49 /KSF	6,370	3%	60:40	115	76	191	10%	50:50	319	318	637
—	*Pass-by/Diverted Link Trips (B – C)*			*2,730*	—	—	*49*	*33*	*82*	—	—	*136*	*137*	*273*
D	Commercial Office	650 KSF	LN Formula	6,951	13%	90:10	814	90	904	14%	20:80	195	778	973
E	Hotel	250 Rooms	10 /Room	2,500	6%	60:40	90	60	150	8%	60:40	120	80	200
F	*Subtotal Proposed Driveway (A+B+D+E)*			*44,951*	—		*1,490*	*1,949*	*3,439*	—		*2,433*	*2,026*	*4,459*
G	*Subtotal Proposed Cumulative (A+C+D+E)*			*42,221*	—		*1,441*	*1,916*	*3,357*	—		*2,297*	*1,889*	*4,186*
Reductions														
—	Navy Square Footage Decrease[c]	-619.116 KSF	— —	(2,600)	9%	90:10	(211)	(23)	(234)	10%	10:90	(26)	(234)	(260)
—	Transit, Bicycle and Pedestrian Reductions[d,e]		Daily: -1.79%	(755)	AM:	-3.28%	(47)	(63)	(110)	PM:	-2.91%	(67)	(55)	(122)
—	Mixed-Use Reductions[f]		Daily: -10.12%	(4,274)	AM:	-9.56%	(139)	(182)	(321)	PM:	-9.94%	(245)	(171)	(416)
H	*Subtotal Reductions*			*(7,629)*	—		*(397)*	*(268)*	*(665)*	—		*(338)*	*(460)*	*(798)*
Total Driveway Trips (F+H)				**37,322**	—		**1,093**	**1,681**	**2,774**	—		**2,095**	**1,566**	**3,661**
Total Cumulative Trips (G+H)				**34,592**	—		**1,044**	**1,648**	**2,692**	—		**1,959**	**1,429**	**3,388**

General Notes:

1. ADT-Average Daily Traffic, KSF-1,000 Square Feet, DU-Dwelling Unit, LN-Natural Log
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Cumulative + Pass-By & Diverted Link)
3. Cumulative Trips—net new vehicles added to the network

Footnotes:

a. Trip ends are one-way traffic movements, either entering or leaving.
b. Trip rates obtained from the City of San Diego *Trip Generation Manual.*
c. Navy development square footage decreases from 1,683,384 SF to 1,064,268 SF.
d. Reductions obtained from the draft *City of Transportation Study Manual (TSM).*
e. Utilized 1/4 of the recommended percentage reductions on the basis that approximately 1/4 of the proposed OTC site would be within a 1/2 mile walking distance of the existing Old Town Transit Station.
f. Reductions obtained from the *City of San Diego Traffic Impact Study Manual.*

TABLE 7–7

ALTERNATIVE 4: HIGHER-DENSITY MIXED-USE REVITALIZATION INCLUDING A TRANSIT CENTER

TRIP GENERATION

ID	Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
			Rate[b]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Proposed Land Uses														
A	Multi-family Residential	10,000 DU	6 /DU	60,000	8%	20:80	960	3,840	4,800	9%	70:30	3,780	1,620	5,400
B	Community Retail (Driveway)	250 KSF	70 /KSF	17,500	3%	60:40	315	210	525	10%	50:50	875	875	1,750
C	Community Retail (Cumulative)	250 KSF	49 /KSF	12,250	3%	60:40	221	147	368	10%	50:50	613	612	1,225
—	*Pass-by/Diverted Link Trips (B – C)*			*5,250*	—	—	*94*	*63*	*157*	—	—	*262*	*263*	*525*
D	Commercial Office	1,350 KSF	LN Formula	12,078	13%	90:10	1,413	157	1,570	14%	20:80	338	1,353	1,691
E	Hotel	450 Rooms	10 /Room	4,500	6%	60:40	162	108	270	8%	60:40	216	144	360
F	*Subtotal Proposed Driveway (A+B+D+E)*			*94,078*	—		*2,850*	*4,315*	*7,165*	—		*5,209*	*3,992*	*9,201*
G	*Subtotal Proposed Cumulative (A+C+D+E)*			*88,828*	—		*2,756*	*4,252*	*7,008*	—		*4,947*	*3,729*	*8,676*
Reductions														
—	Navy Square Footage Decrease[c]	-619.116 KSF	— —	(2,600)	9%	90:10	(211)	(23)	(234)	10%	10:90	(26)	(234)	(260)
—	Transit, Bicycle and Pedestrian Reductions[d,e]		Daily: -7.50%	(6,663)	AM:	-13.16%	(354)	(568)	(922)	PM:	-11.85%	(591)	(437)	(1,028)
—	Mixed-Use Reductions[f]		Daily: -10.74%	(9,543)	AM:	-9.92%	(287)	(408)	(695)	PM:	-10.51%	(544)	(368)	(912)
H	*Subtotal Reductions*			*(18,806)*	—		*(852)*	*(999)*	*(1,851)*	—		*(1,161)*	*(1,039)*	*(2,200)*
Total Driveway Trips (F+H)				**75,272**	—		**1,998**	**3,316**	**5,314**	—		**4,048**	**2,953**	**7,001**
Total Cumulative Trips (G+H)				**70,022**	—		**1,904**	**3,253**	**5,157**	—		**3,786**	**2,690**	**6,476**

General Notes:

1. ADT-Average Daily Traffic, KSF-1,000 Square Feet, DU-Dwelling Unit, LN-Natural Log
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Cumulative + Pass-By & Diverted Link)
3. Cumulative Trips—net new vehicles added to the network

Footnotes:

a. Trip ends are one-way traffic movements, either entering or leaving.
b. Trip rates obtained from the City of San Diego *Trip Generation Manual*.
c. Navy development square footage decreases from 1,683,384 SF to 1,064,268 SF.
d. Reductions obtained from the draft *City of Transportation Study Manual (TSM).*
e. Utilized 1/4 of the recommended percentage reductions on the basis that this alternative would have a transit station located within the site.
f. Reductions obtained from the *City of San Diego Traffic Impact Study Manual.*

TABLE 7–8
ALTERNATIVE 5: LOWER-DENSITY MIXED-USE REVITALIZATION INCLUDING A TRANSIT CENTER
TRIP GENERATION

ID	Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
			Rate[b]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Proposed Land Uses														
A	Multi-family Residential	8,000 DU	6 /DU	48,000	8%	20:80	768	3,072	3,840	9%	70:30	3,024	1,296	4,320
B	Community Retail (Driveway)	200 KSF	70 /KSF	14,000	3%	60:40	252	168	420	10%	50:50	700	700	1,400
C	Community Retail (Cumulative)	200 KSF	49 /KSF	9,800	3%	60:40	176	118	294	10%	50:50	490	490	980
—	*Pass-by/Diverted Link Trips (B – C)*			*4,200*	—	—	*76*	*50*	*126*	—	—	*210*	*210*	*420*
D	Commercial Office	850 KSF	LN Formula	8,513	13%	90:10	996	111	1,107	14%	20:80	238	954	1,192
E	Hotel	450 Rooms	10 /Room	4,500	6%	60:40	162	108	270	8%	60:40	216	144	360
F	*Subtotal Proposed Driveway (A+B+D+E)*			*75,013*	—		*2,178*	*3,459*	*5,637*	—		*4,178*	*3,094*	*7,272*
G	*Subtotal Proposed Cumulative (A+C+D+E)*			*70,813*	—		*2,102*	*3,409*	*5,511*	—		*3,968*	*2,884*	*6,852*
Reductions														
—	Navy Square Footage Decrease[c]	-619.116 KSF	— —	(2,600)	9%	90:10	(211)	(23)	(234)	10%	10:90	(26)	(234)	(260)
—	Transit, Bicycle and Pedestrian Reductions[d,e]		Daily: -7.51%	(5,321)	AM:	-13.03%	(265)	(453)	(718)	PM:	-11.70%	(471)	(331)	(802)
—	Mixed-Use Reductions[f]		Daily: -10.71%	(7,583)	AM:	-9.85%	(220)	(323)	(543)	PM:	-10.51%	(432)	(288)	(720)
H	*Subtotal Reductions*			*(15,504)*	—		*(696)*	*(799)*	*(1,495)*	—		*(929)*	*(853)*	*(1,782)*
Total Driveway Trips (F+H)				**59,509**	—		**1,482**	**2,660**	**4,142**	—		**3,249**	**2,241**	**5,490**
Total Cumulative Trips (G+H)				**55,309**	—		**1,406**	**2,610**	**4,016**	—		**3,039**	**2,031**	**5,070**

General Notes:
1. ADT-Average Daily Traffic, KSF-1,000 Square Feet, DU-Dwelling Unit, LN-Natural Log
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Cumulative + Pass-By & Diverted Link)
3. Cumulative Trips—net new vehicles added to the network

Footnotes:
a. Trip ends are one-way traffic movements, either entering or leaving.
b. Trip rates obtained from the City of San Diego *Trip Generation Manual.*
c. Navy development square footage decreases from 1,683,384 SF to 1,064,268 SF.
d. Reductions obtained from the draft *City of Transportation Study Manual (TSM).*
e. Utilized 1/4 of the recommended percentage reductions on the basis that this alternative would have a transit station located within the site.
f. Reductions obtained from the *City of San Diego Traffic Impact Study Manual.*

TABLE 7–9
ALTERNATIVE 2: HIGHER-DENSITY MIXED-USE REVITALIZATION (25%)
TRIP GENERATION

ID	Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
			Rate[b]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Proposed Land Uses														
A	Multi-family Residential	1,650 DU	6 /DU	9,900	8%	20:80	158	634	792	9%	70:30	324	267	891
B	Community Retail (Driveway)	45 KSF	70 /KSF	3,150	3%	60:40	57	38	95	10%	50:50	158	157	315
C	Community Retail (Cumulative)	45 KSF	49 /KSF	2,205	3%	60:40	40	26	66	10%	50:50	111	110	221
—	*Pass-by/Diverted Link Trips (B – C)*			945	—	—	17	12	19	—	—	47	47	94
D	Commercial Office	250 KSF	13.500/KSF	9,626	13%	90:10	395	44	439	14%	20:80	95	378	473
E	Hotel	100 Rooms	10 /Room	1,000	6%	60:40	36	24	60	8%	60:40	48	32	80
F	*Subtotal Proposed Driveway (A+B+D+E)*			*17,245*	—		*646*	*740*	*1,386*	—		*925*	*834*	*1,759*
G	*Subtotal Proposed Cumulative (A+C+D+E)*			*16,480*	—		*629*	*728*	*1,357*	—		*878*	*787*	*1,665*
Reductions														
—	Navy Square Footage Decrease[c]	-619.116 KSF	— —	(2,600)	9%	90:10	(211)	(23)	(234)	10%	10:90	(26)	(234)	(260)
—	Transit, Bicycle and Pedestrian Reductions[d,e]		Daily: -1.77%	(292)	AM:	-3.32%	(21)	(24)	(45)	PM:	-3.00%	(27)	(23)	(50)
—	Mixed-Use Reductions[f]		Daily: -9.93%	(1,637)	AM:	-9.43%	(59)	(69)	(128)	PM:	-9.73%	(93)	(69)	(162)
H	*Subtotal Reductions*			*(4,529)*	—		*(291)*	*(116)*	*(407)*	—		*(146)*	*(326)*	*(472)*
Total Driveway Trips (F+H)				**12,896**	—		**355**	**624**	**979**	—		**779**	**508**	**1,287**
Total Cumulative Trips (G+H)				**11,951**	—		**338**	**612**	**950**	—		**732**	**461**	**1,193**

General Notes:
1. ADT-Average Daily Traffic, KSF-1,000 Square Feet, DU-Dwelling Unit, LN-Natural Log
2. Driveway Trips—vehicles entering and exiting project driveways (Driveway = Cumulative + Pass-By & Diverted Link)
3. Cumulative Trips—net new vehicles added to the network

Footnotes:
a. Trip ends are one-way traffic movements, either entering or leaving.
b. Trip rates obtained from the City of San Diego *Trip Generation Manual*.
c. Navy development square footage decreases from 1,683,384 SF to 1,064,268 SF.
d. Reductions obtained from the draft *City of Transportation Study Manual (TSM).*
e. Utilized 1/4 of the recommended percentage reductions on the basis that approximately 1/4 of the proposed OTC site would be within a 1,500 feet walking distance of the existing Old Town Transit Station.
f. Reductions obtained from the *City of San Diego Traffic Impact Study Manual.*

7.2 Trip Distribution & Assignment

The land uses for each of the Proposed Action alternatives were inputted in a SANDAG Series 13 Year 2050 forecast traffic model. Five (5) total traffic models were run to develop the trip distribution for the Proposed Action alternatives. A Select Zone Assignment (SZA) was prepared for each Proposed Action alternative from the traffic model, and upon review, all trip distributions were similar for the assignment of trips. Therefore, one trip distribution was used for assigning project trips for each of the Proposed Action alternatives to the street system. *Section 9.0* of this report provides additional details on the SANDAG modeling process.

Figure 7–1 shows the trip distribution used for all Proposed Action alternatives.

Figure 7–2 shows the Alternative 1: Navy Recapitalization at OTC traffic volumes.

Figure 7–3 shows the Alternative 2: Higher-density Mixed-use Revitalization traffic volumes.

Figure 7–4 shows the Alternative 3: Lower-density Mixed-use Revitalization traffic volumes.

Figure 7–5 shows the Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center traffic volumes.

Figure 7–6 shows the Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center traffic volumes.

Each of the above listed five figures show volumes for the ultimate traffic generated by each Proposed Action alternative.

Figure 7–7 shows the Alternative 2: Higher-density Mixed-use Revitalization (25%) traffic volumes assigned in the near-term Year 2030 condition.

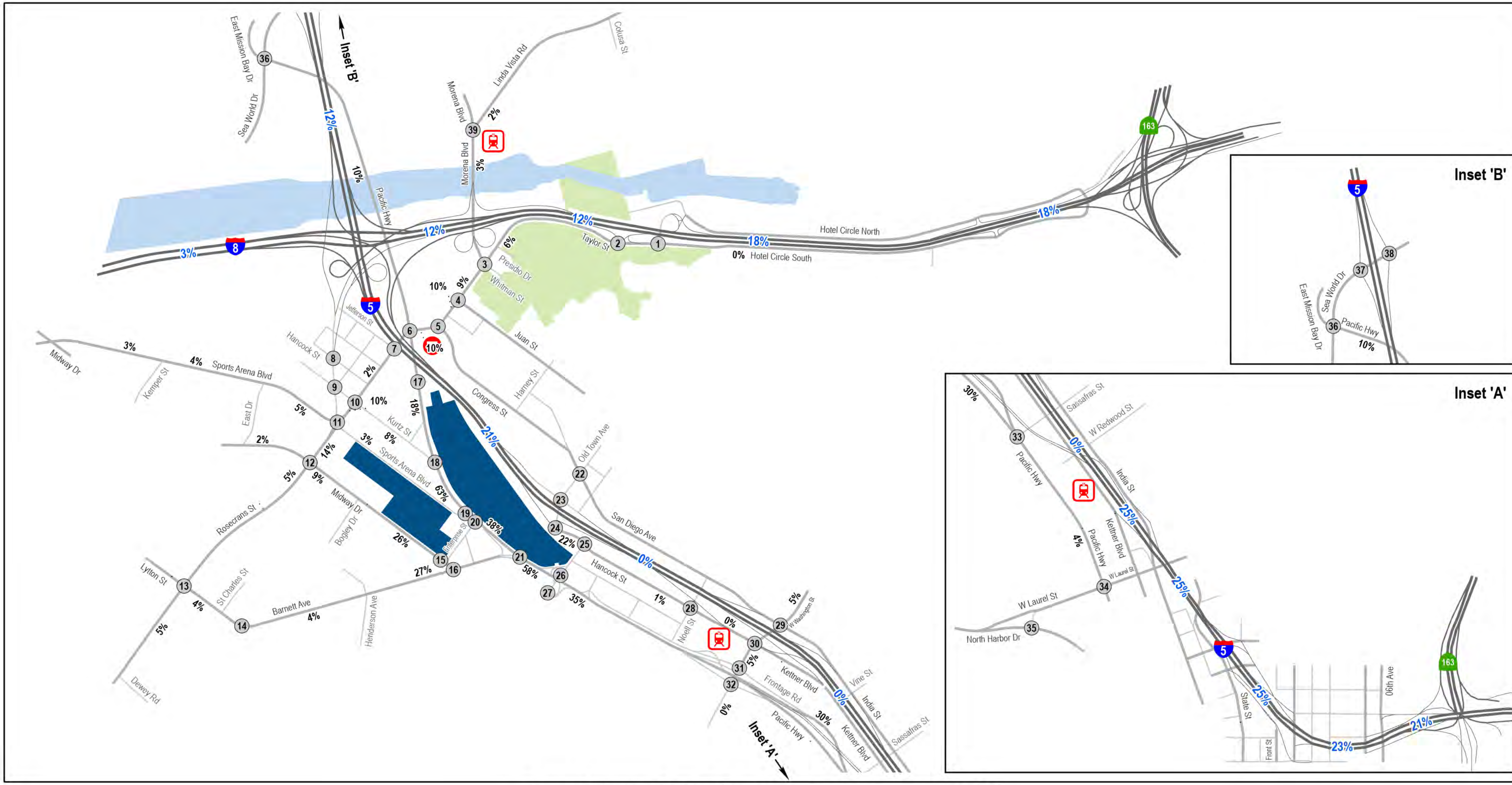


Figure 7-1 Proposed Action alternatives Traffic Distribution (Page 1 of 2)

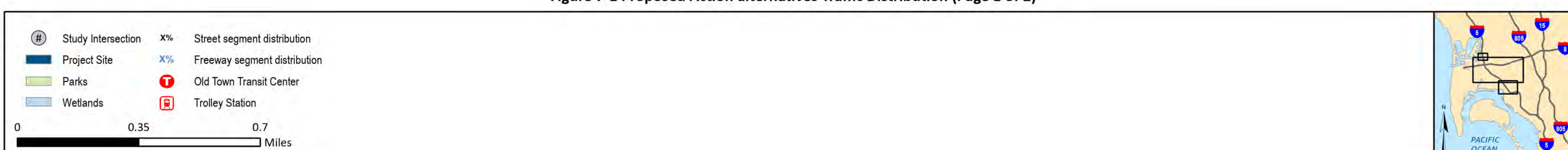


Figure 7-1 Proposed Action alternatives Traffic Distribution (Page 2 of 2)

(#) Study Intersection

Inbound Trip Distribution

Outbound Trip Distribution

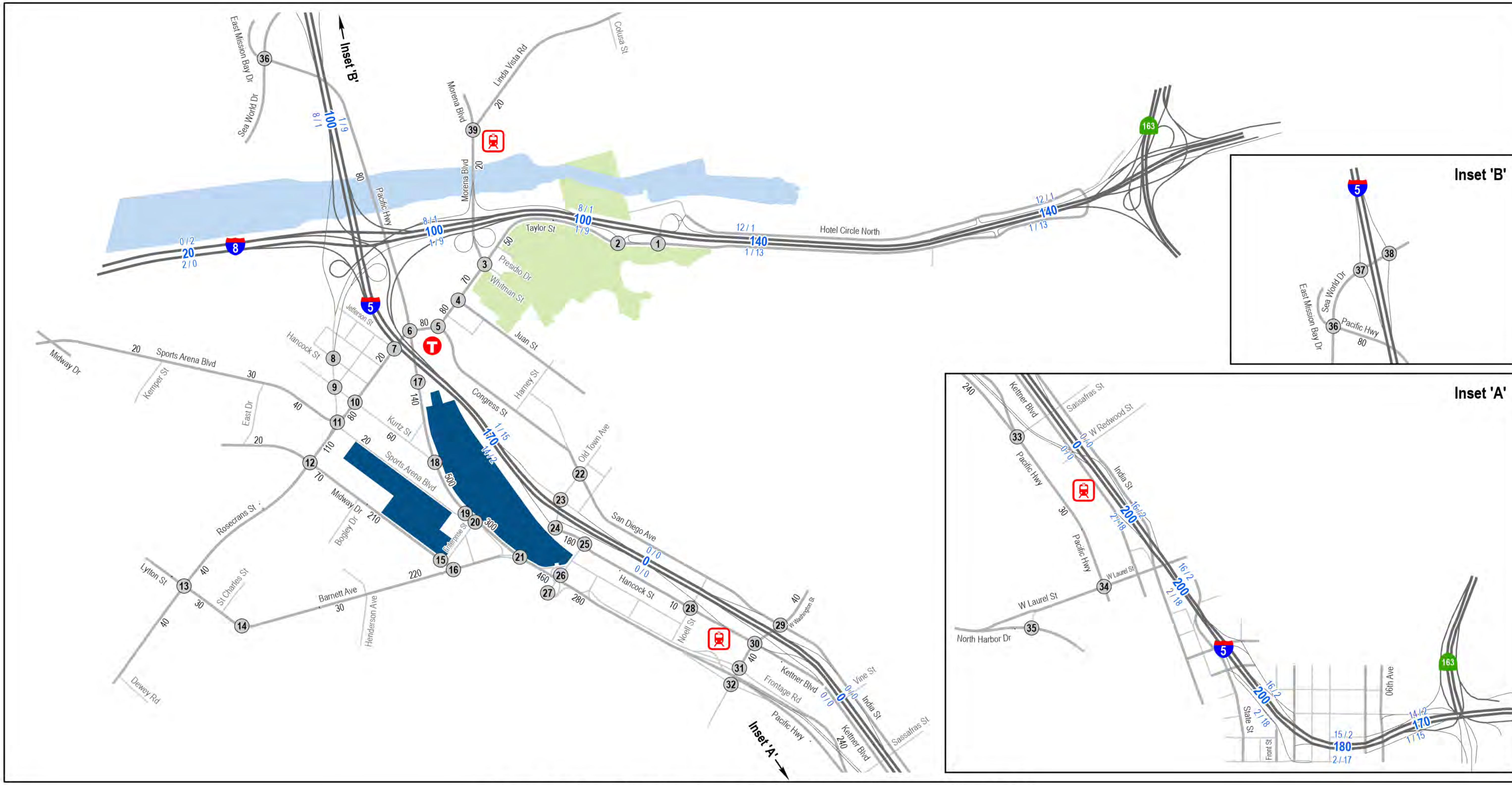


Figure 7-2 Alternative 1: Navy Recapitalization at OTC Traffic Volumes (Page 1 of 2)

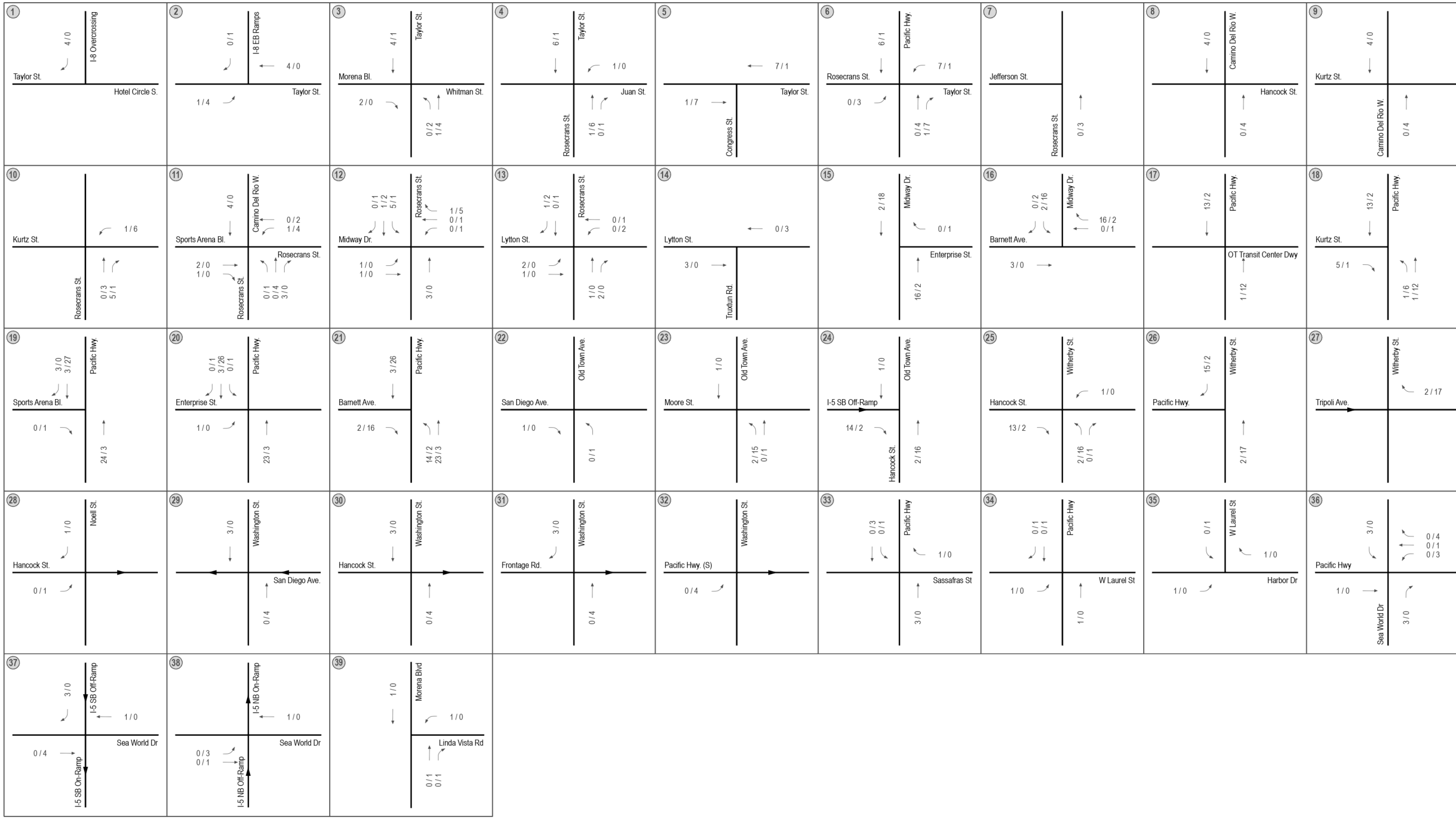


Figure 7-2 Alternative 1: Navy Recapitalization at OTC Traffic Volumes (Page 2 of 2)

(#) Study Intersections

Intersection AM/PM Peak Hour Volumes

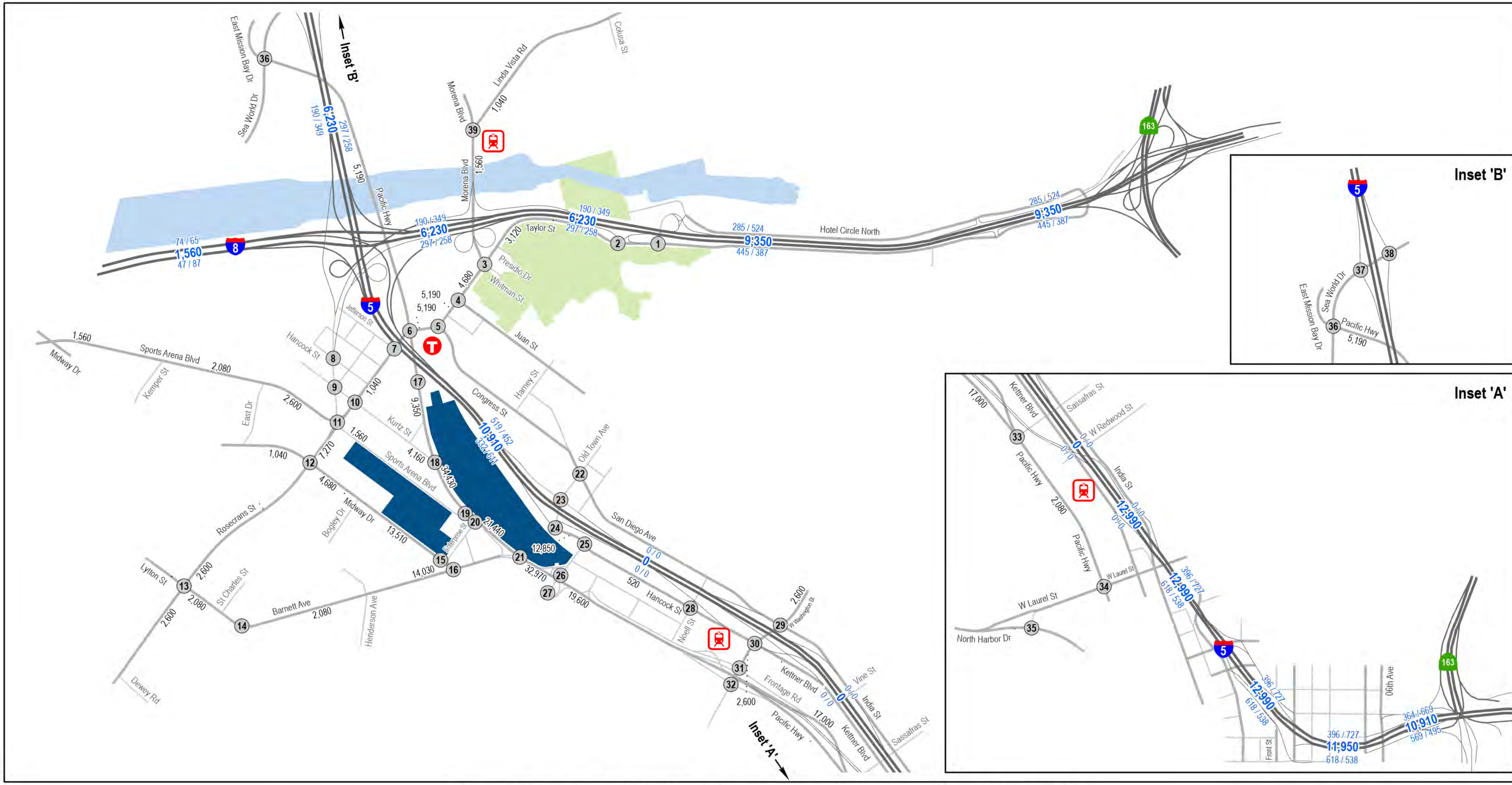
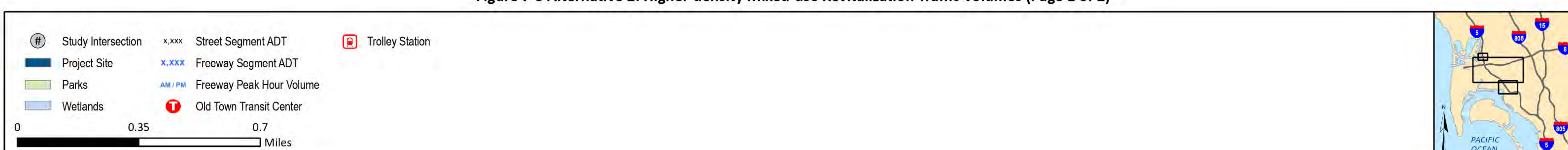


Figure 7-3 Alternative 2: Higher-density Mixed-use Revitalization Traffic Volumes (Page 1 of 2)



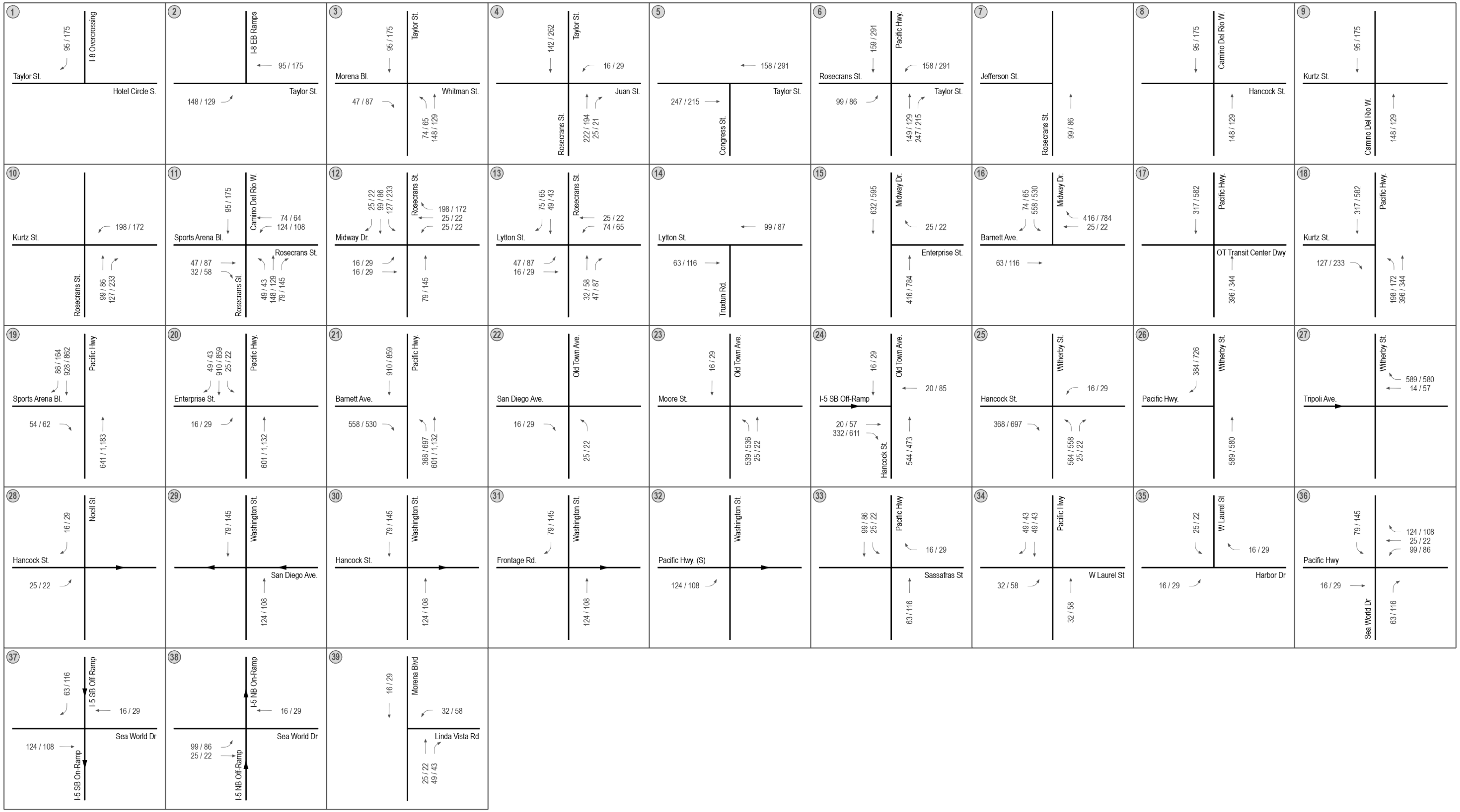


Figure 7-3 Alternative 2: Higher-density Mixed-use Revitalization Traffic Volumes (Page 2 of 2)

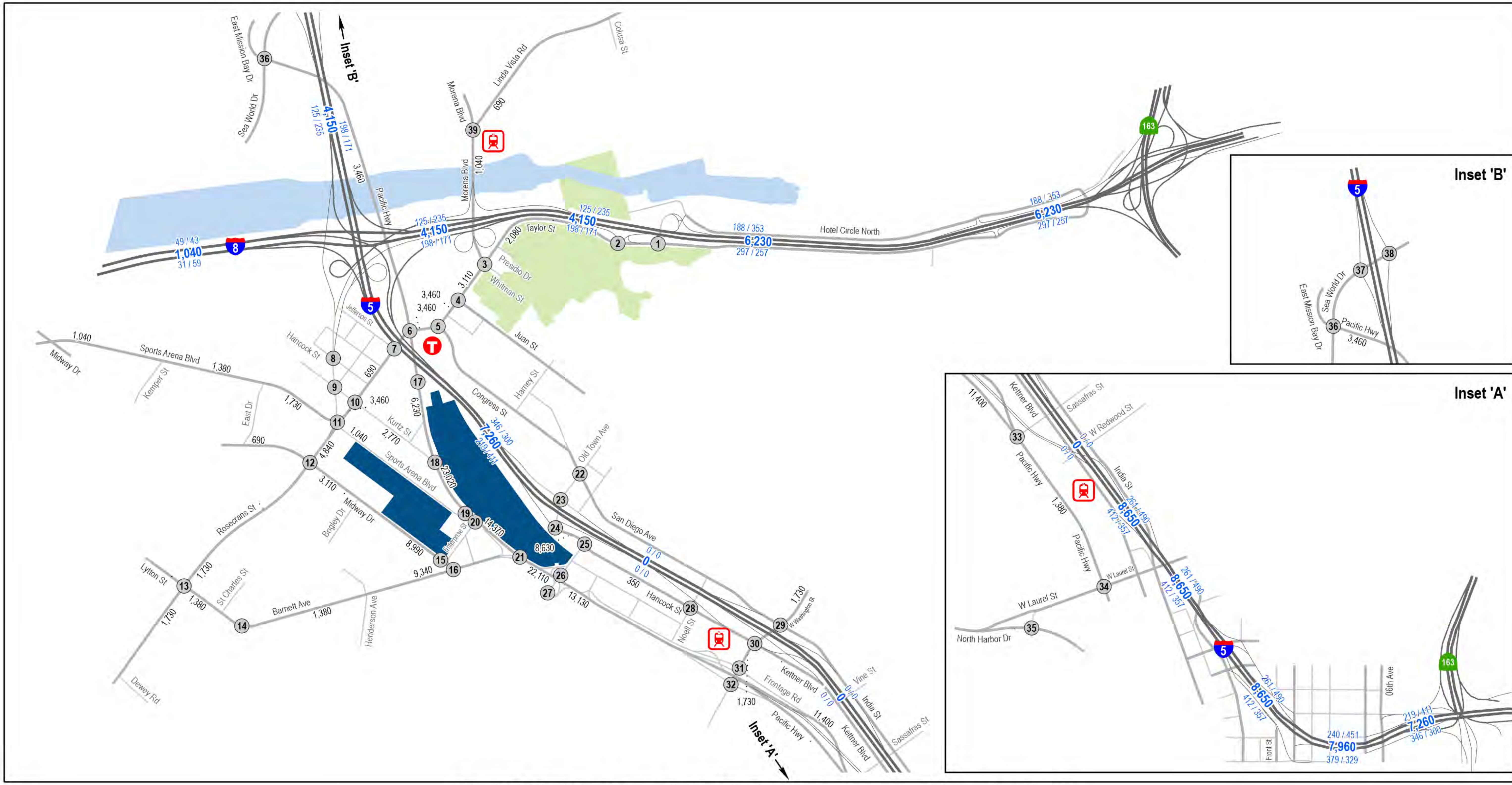
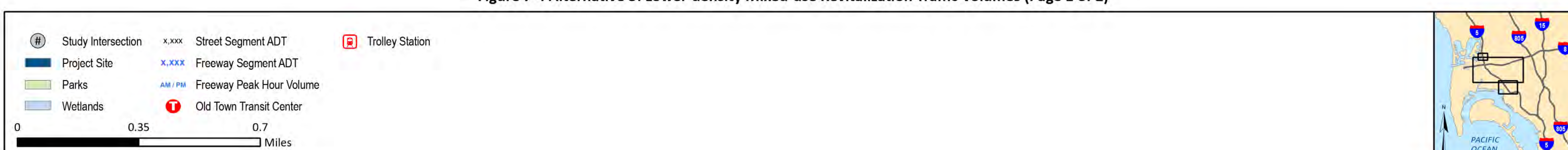


Figure 7-4 Alternative 3: Lower-density Mixed-use Revitalization Traffic Volumes (Page 1 of 2)



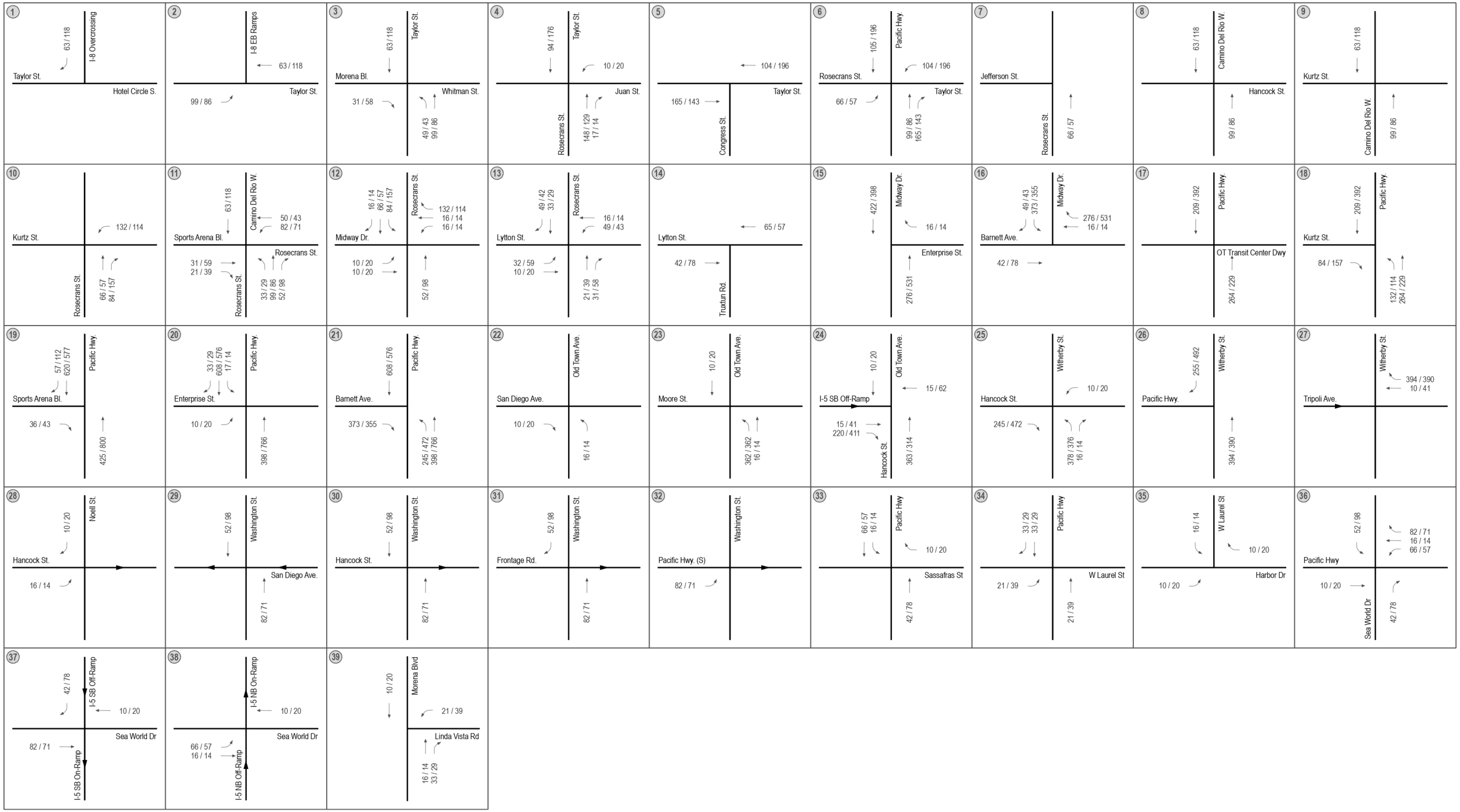


Figure 7-4 Alternative 3: Lower-density Mixed-use Revitalization Traffic Volumes (Page 2 of 2)

(#) Study Intersections

Intersection AM/PM Peak Hour Volumes

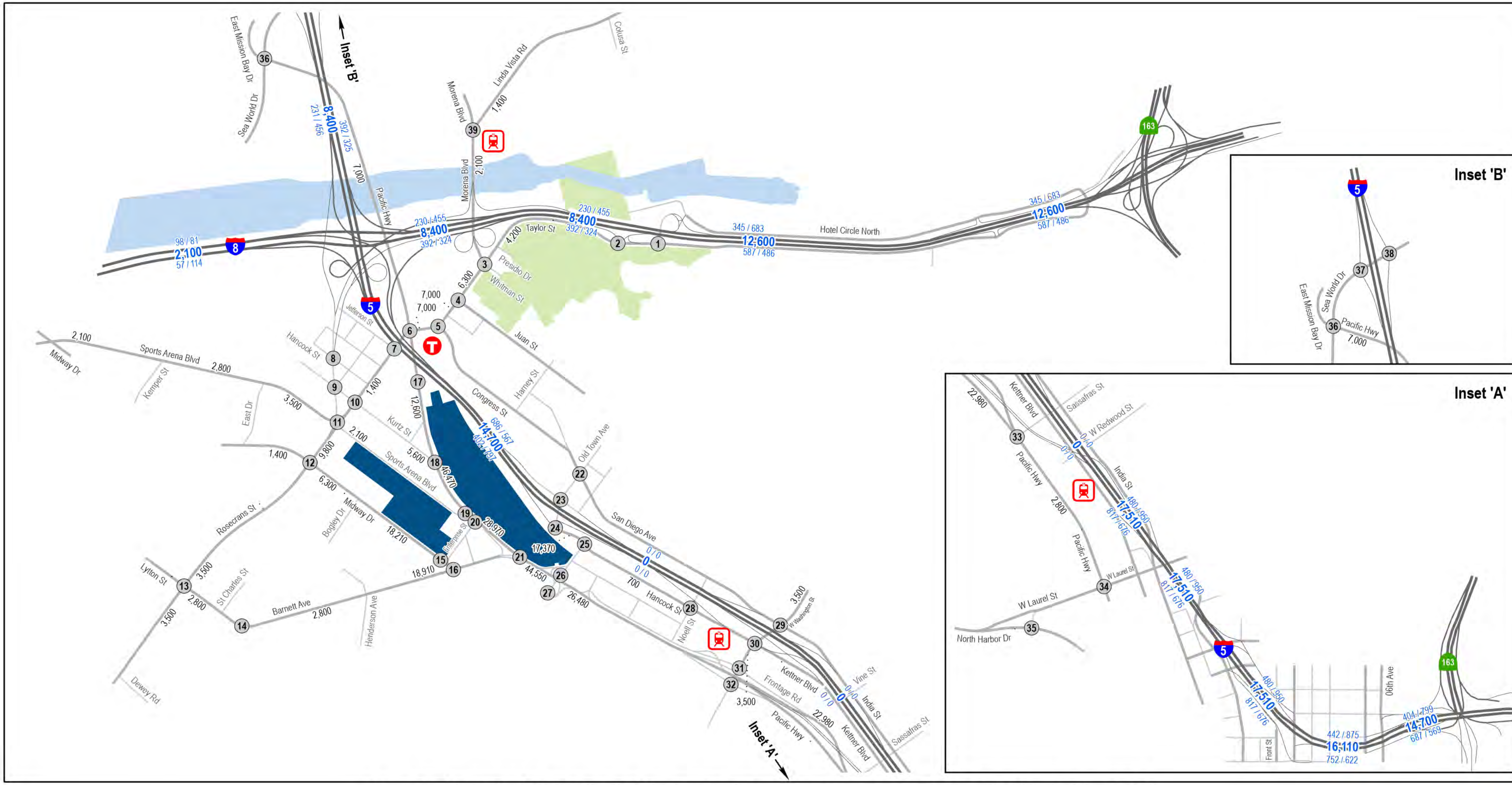
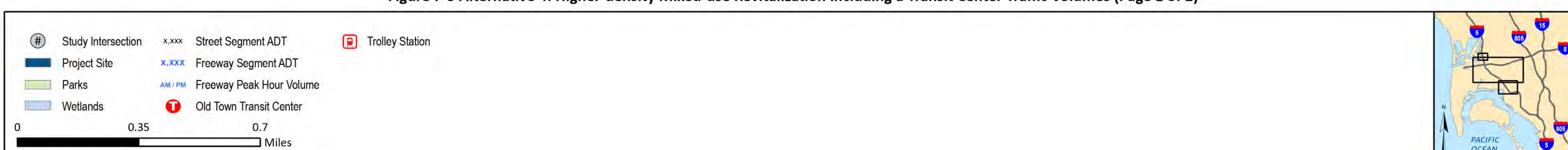


Figure 7-5 Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 1 of 2)



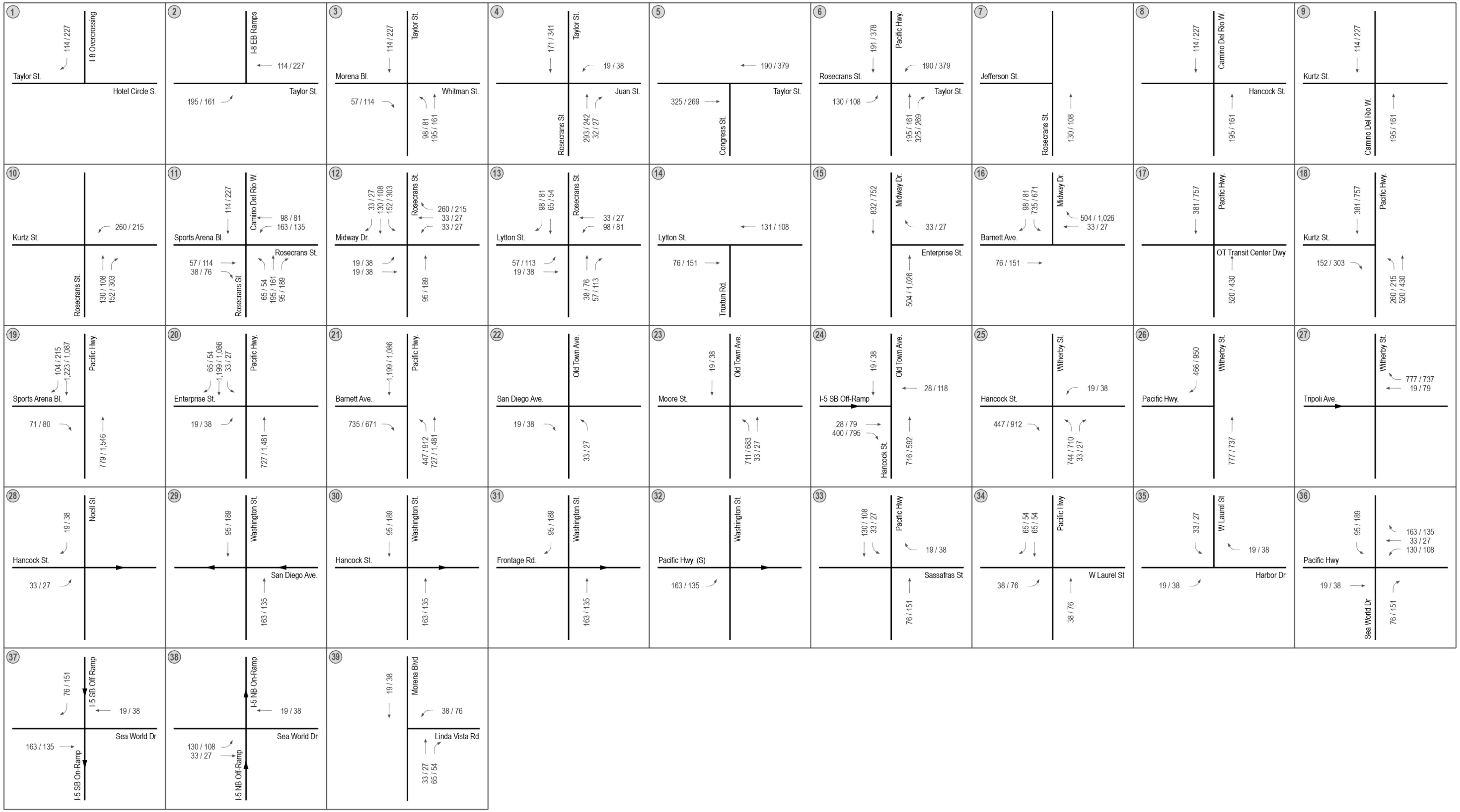


Figure 7-5 Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 2 of 2)

(#) Study Intersections

Intersection AM/PM Peak Hour Volumes

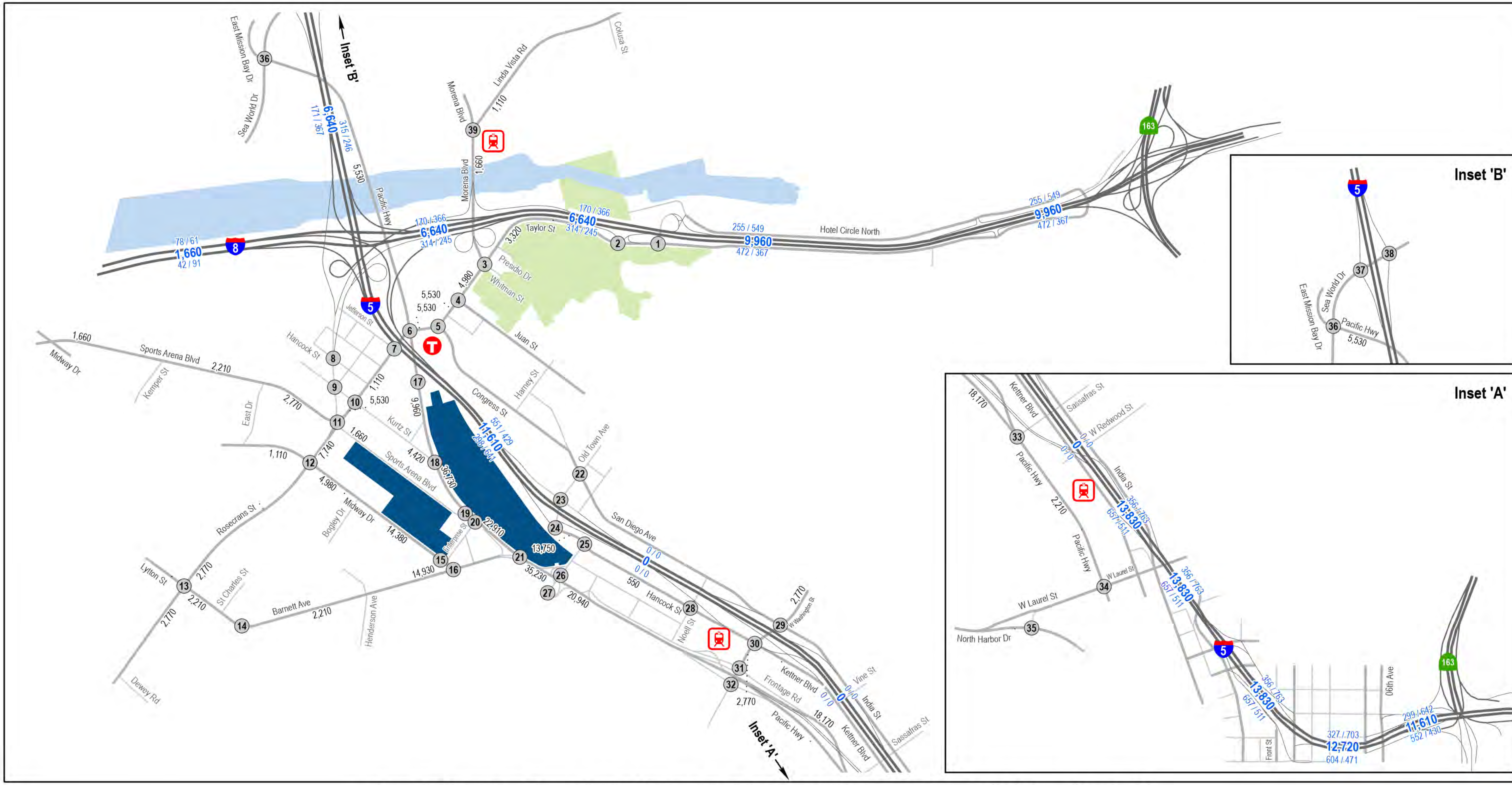


Figure 7-6 Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 1 of 2)

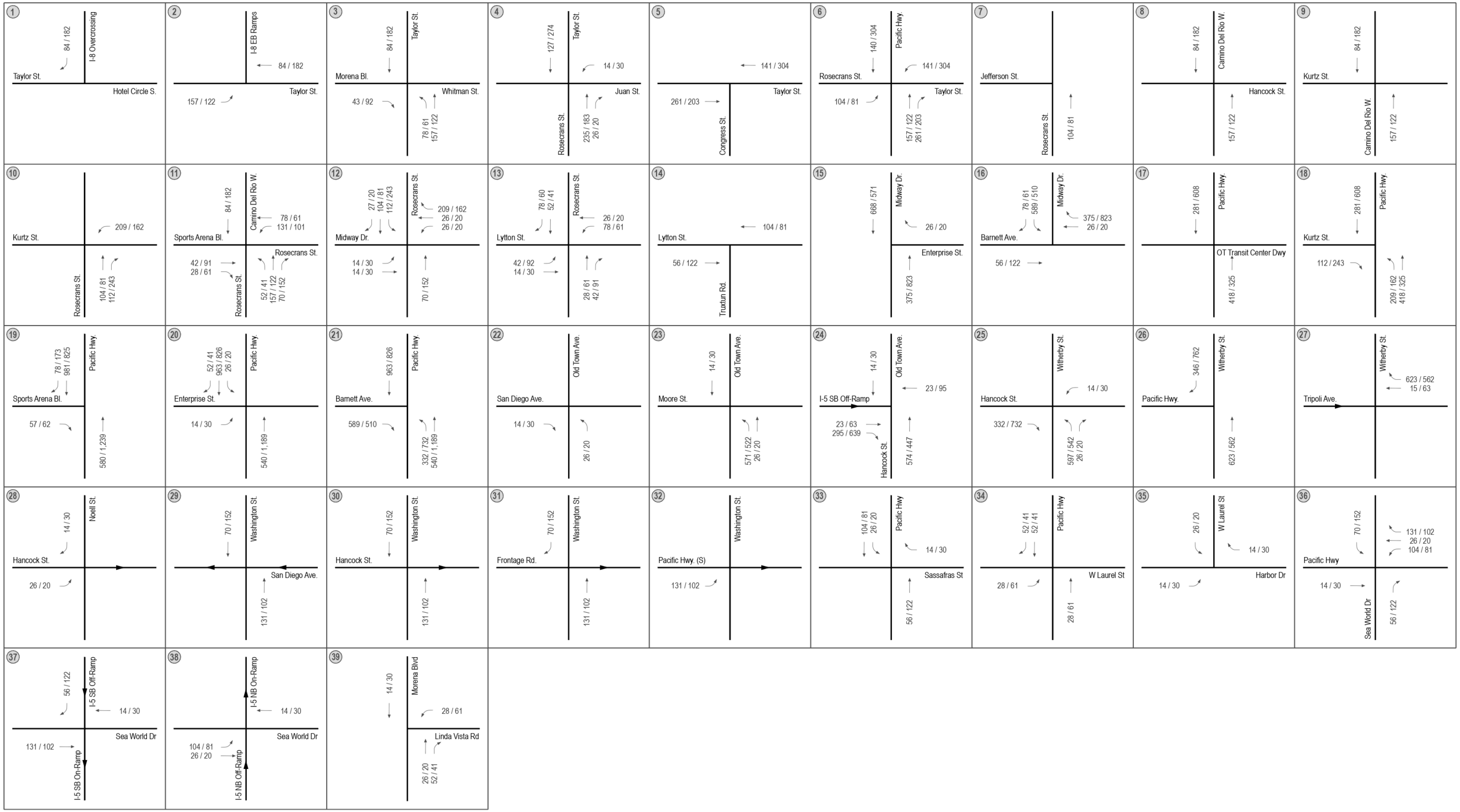


Figure 7-6 Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 2 of 2)

(#) Study Intersections

Intersection AM/PM Peak Hour Volumes

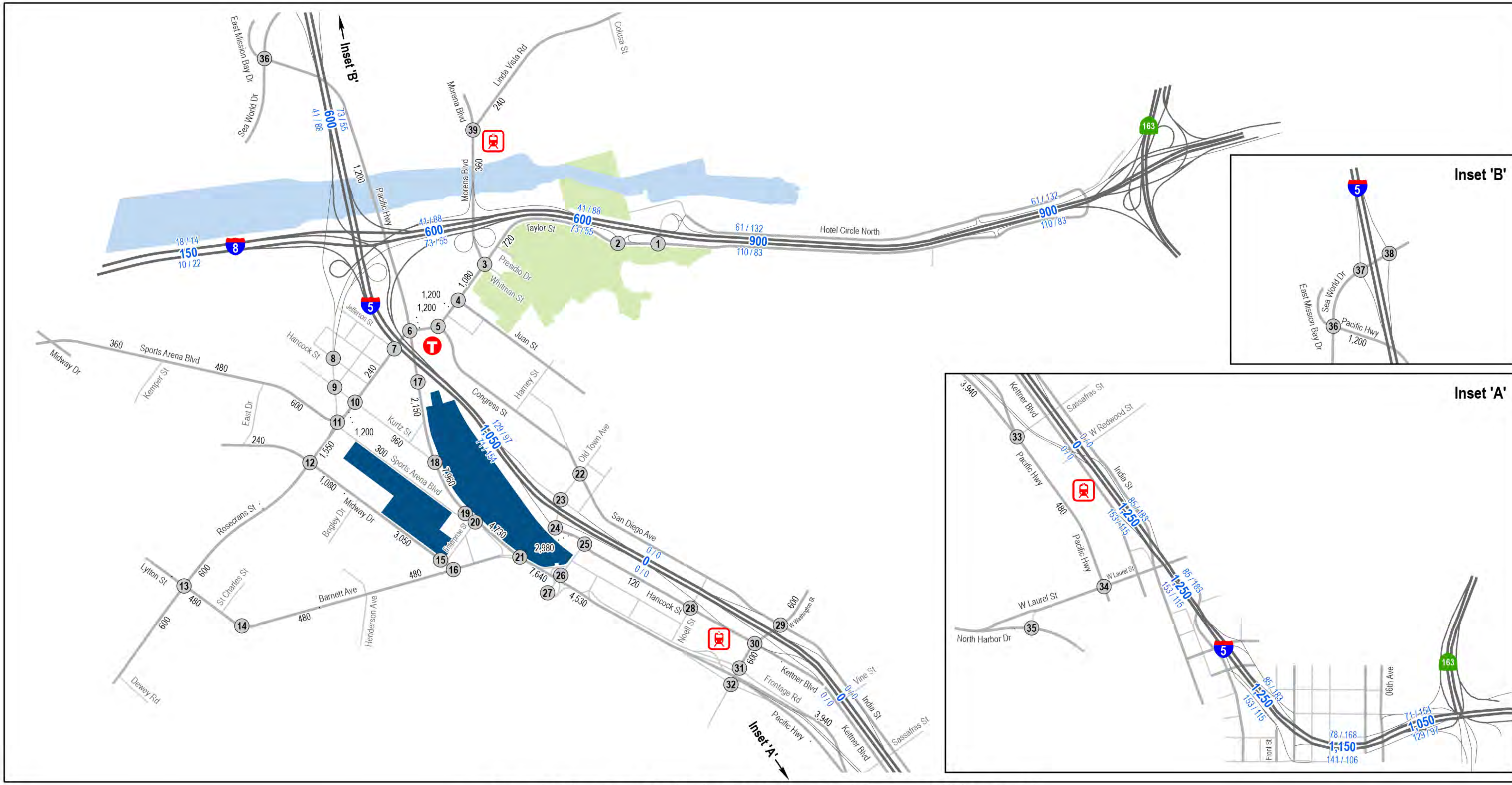
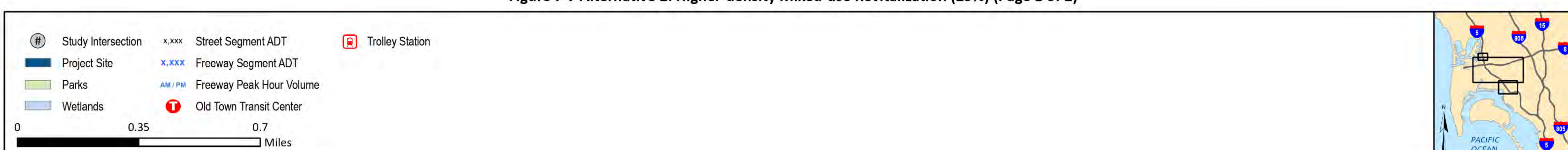


Figure 7-7 Alternative 2: Higher-density Mixed-use Revitalization (25%) (Page 1 of 2)



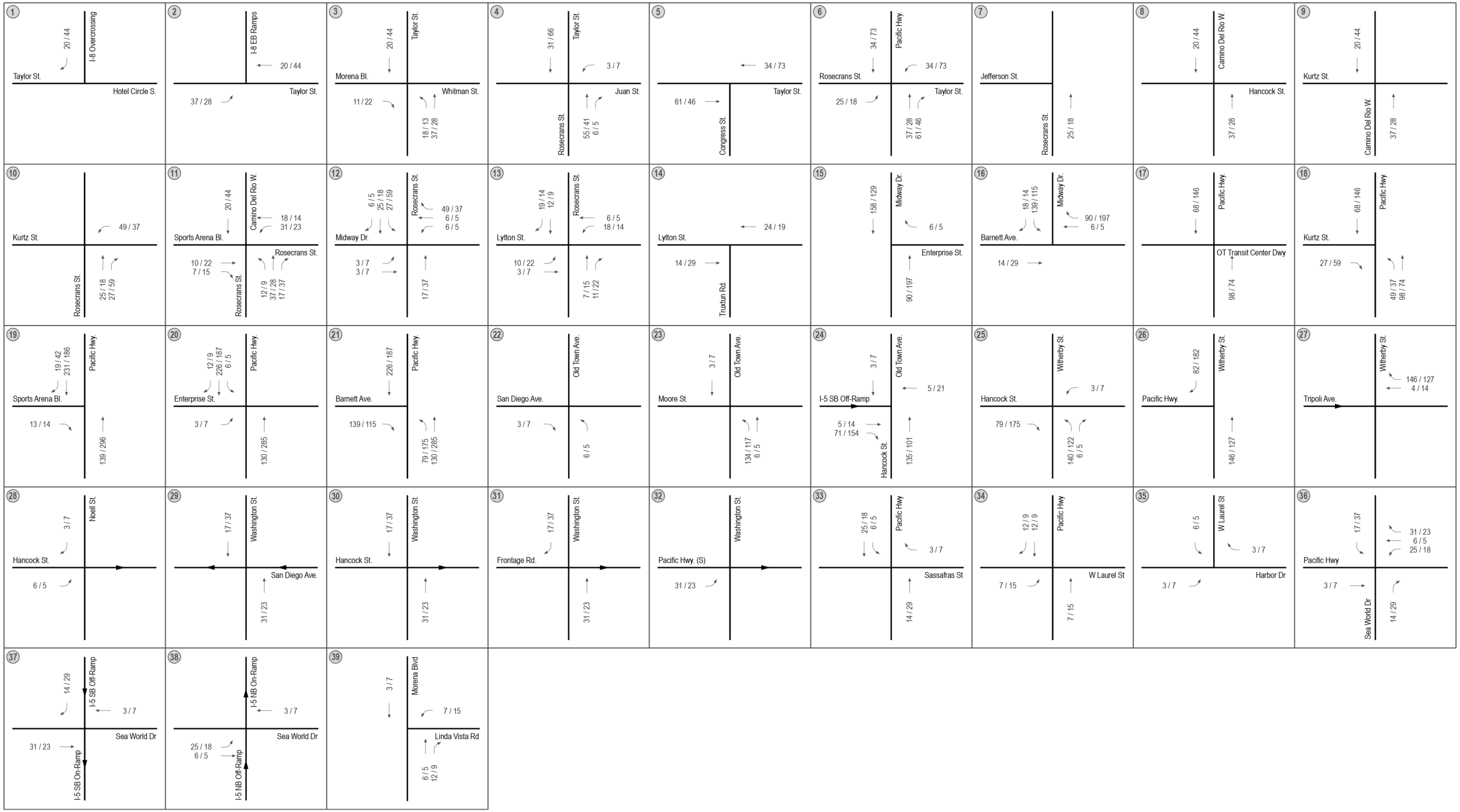


Figure 7-7 Alternative 2: Higher-density Mixed-use Revitalization (25%) (Page 2 of 2)

(#) Study Intersections

Intersection AM/PM Peak Hour Volumes

8.0 CUMULATIVE CONDITIONS

Cumulative projects represent reasonably foreseeable planned development that contributes to background traffic conditions that are planned for the future, but are not yet completed and occupied at the time of the collection of existing count data used in this analysis. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the potential for a cumulative project to traverse the study area affected by the Proposed Action alternatives by the time of project occupancy. If no such potential relationship exists, the cumulative project was not carried forward into the cumulative impacts analysis.

For this transportation analysis, because the Proposed Action alternatives consist of different levels of activity, the general limit of the geographic extent of the cumulative projects and effects is also generally equivalent to the scope of for each Proposed Action alternative, for most resource areas. The geographic extent of each Proposed Action alternative is as follows:

> *Alternative 1:* Because this alternative focuses on recapitalizing the existing property, the geographic extent is equivalent to the OTC and adjacent areas (generally within one mile) and overlapping/adjacent Community Planning Areas.
>
> *Alternatives 2 and 3:* Because these alternatives consider a public-private partnership and commercial development at OTC, the geographic extent consists of the OTC, and the surrounding region (as defined by overlapping/adjacent Community Planning Areas). Though Alternatives 2 and 3 propose different densities of development, because they are similar when viewed in a cumulative impacts context, this cumulative analysis groups them together.
>
> *Alternatives 4 and 5:* Because these alternatives include the potential move of the Old Town Transit Center operations to OTC, the geographic extent for these alternatives consists of the extent associated with Alternatives 2 and 3 with the addition of cumulative projects associated with regional transportation plans, programs, and projects (e.g., automated people mover, light rail, mass transit, etc.). Though Alternatives 4 and 5 propose different densities of development, because they are similar when viewed in a cumulative impacts context, this cumulative analysis groups them together.

The cumulative transportation analysis provided in this report evaluates the incorporation of the geographic extent of all resources (i.e. Alternatives 4 & 5) given the study area extends beyond the scope or immediate area of impact associated with the Proposed Action alternatives.

Projects included in this cumulative impact analysis are summarized in ***Table 8–1*** at the end of this section. This list of identified projects generally includes projects, plans, and programs within the following categories: community development, residential construction, transportation improvements (car, train, marine, and airplane), infrastructure improvements, land and realty development/redevelopment, regular military operations and maintenance actions, military training operations, and military resource management.

8.1 Future Planning Documents

As the Proposed Action is situated in a major urban area with robust community development plans, the Navy first closely reviewed the relevant community plans located within and adjacent to the OTC. These plans include the Midway-Pacific, Old Town, Uptown, and Mission Valley Community Plans.

The following agencies were coordinated with to determine if future planning documents should be included in the list of potential cumulative projects considered in this analysis:

- Navy Base Point Loma (OTC);
- Marine Corps Recruit Depot San Diego;
- City of San Diego;
- County of San Diego;
- SANDAG;
- Port of San Diego;
- Others (San Diego International Airport, Sports Arena, etc.); and
- Projects identified through the scoping and public review process.

Upon receipt of the information from the aforementioned sources, the Navy then reviewed the provided list of projects and/or plans and then determined if those projects and/or plans merited carrying forward for cumulative impacts analysis.

8.1.1 *Military Plans*

Over 60 percent of the Navy's Pacific fleet and over 40 percent of the Marine Corps combat capability are in the San Diego area. In addition, more than 50 percent of Marine Corps recruits are trained at MCRD San Diego. Marine Corps installations and training ranges in the San Diego area, combined with the proximity to Navy installations and ranges, including NAVWAR, are essential to military readiness and are irreplaceable anywhere else in the nation (San Diego Military Advisory Council 2019).

The military has prepared installation-level plans and makes installation and regional-level considerations that reflect the whole of the military's critical and sustained presence in the greater San Diego Area. The continued synergy between military installations and complementary non-military actions is an important element in not just the continued achievement of military missions, but, the identification and implementation of past, present, and reasonably foreseeable projects by others in the region. An example of this is how the military is recognized and integrated into City of San Diego and SANDAG plans, as noted below.

8.1.2 *City of San Diego Community Plans*

The California Government Code gives local governments the authority to create land use policies within their jurisdictional boundaries and the ability to create a citywide land use and policy document called a *General Plan*. Large cities, such as San Diego, often subdivide the city into a number of community plans, or “mini” land use policy plans for more specific geographic areas. The City’s General Plan is comprised of 10 elements that provide a comprehensive slate of citywide policies and further the City of Villages smart growth strategy for growth and development (City of San Diego 2020a).

Community plans work together with the General Plan to provide location-based policies and recommendations in the City’s fifty-plus community planning areas. Community plans are written to refine the General Plan’s citywide policies, designate land uses and housing densities, and provide additional site-specific recommendations as needed. The community plans must work as part of the General Plan and must not contain policies or recommendations that are contradictory to any element of the General Plan or to other community plans (City of San Diego 2020a).

A community plan is a public document which contains specific proposals for future land uses and public improvements in a given community. A community plan provides tailored policies and a long-range physical development guide for elected officials and citizens engaged in community development.

Transportation is just one of the elements found in the Community Plan Typical elements found in a community plan include: Land Use, Transportation, Urban Design, Public Facilities and Services, Natural and Cultural Resources, and Economic Development (City of San Diego 2020b).

There are four community planning areas within or adjacent to the OTC study area:

- Midway-Pacific Highway
- Old Town San Diego
- Uptown
- Mission Valley

Each of these community planning areas have developed their own community plans, reflective of community input. The plans establish the policy framework that guides further development in pursuit of the community vision, consistent with the General Plan goals and polices. The City has also prepared companion EIRs for each of the community plans that consider the impacts associated with implementing the respective plans. The EIRs analyze the distribution and arrangement of land uses (public and private); the street, multi-modal mobility, and transit network; provision of parks and public facilities; community wide and site-specific urban design guidelines; and recommendations to preserve and enhance historic and cultural resources within the community.

Due to their breadth, depth, and reflection of a collaborative community development process, the community plans are important considerations when evaluating the potential cumulative impacts of the Proposed Action alternatives (Alternatives 1, 2, 3, 4 and 5), in conjunction with the identified cumulative projects.

8.1.3 *SANDAG Transportation Plans and Program*

SANDAG builds consensus; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transportation, and provides information on a broad range of topics pertinent to the region's quality of life. SANDAG allocates millions of dollars each year in local, state, and federal funds for the San Diego region's transportation network. Some of SANDAGs most relevant plans to the Proposed Action include the:

- 2050 Regional Transportation Plan;
- San Diego Forward: The Regional Plan;
- Regional Transportation Improvement Program; and the
- Federal Regional Transportation Plan.

In general, these plans serve as a blueprint for how the region will grow, and how SANDAG will invest in transportation infrastructure that will provide more choices, strengthen the economy, promote a healthy environment, and support thriving communities. In addition, SANDAG is exploring potential future plans that would consider development of an Automated Passenger Mover (APM) and an Intermodal Transit Center (ITC) within the region.

Due to their vision and collaborative government and community development, SANDAGs plans and programs (notably the APM and ITC) are important considerations when evaluating the potential cumulative impacts of Alternatives 4 and 5 in conjunction with the identified cumulative projects.

8.1.4 *Port of San Diego Master Plan*

For the past few years, the Port of San Diego has prepared a comprehensive integrated planning initiative to update their Port Master Plan, which is similar to a general plan for a city or county. The effort spans 6,000 acres of water and land on and around San Diego Bay in the cities of San Diego, National City, Chula Vista, Imperial Beach, and Coronado. As a blueprint for development, it is intended to create certainty for developers and community members by codifying a vision for how future projects will fulfill public goals. In the summer of 2019, the Port of San Diego released a discussion draft of the updated Port Master Plan for public review. In order to create the “next great waterfront,” it is anticipated that the updated Port Master Plan will result in additional development and changes to the roadway system. Harbor Drive is a key element of the “next great waterfront” vision.

8.1.5 *San Diego International Airport Development Plan*

In 2018, the San Diego County Regional Airport Authority (SDCRAA or Airport Authority) released the San Diego International Airport – Airport Development Plan (SDIA ADP) defining the master plan for San Diego International Airport, as part of the continued commitment to deliver world-class passenger experience and to meet existing and anticipated future passenger activity. Future forecasts project that the airport’s passenger activity will increase to 40 million annually by 2050. The Airport Authority’s Environmental Impact Report (EIR) adopted in January 2020 proposes to modernize Terminal 1 by 2026. As part of that project, the Airport Authority also proposes to develop a new on-airport entry roadway from westbound Laurel Street and North Harbor Drive for vehicles coming to the airport from the east in addition to developing a new multi-use bicycle and pedestrian path along the north side of North Harbor Drive to reduce traffic on North Harbor Drive. Buses to and from the airport Rental Car Center would be removed from Harbor Drive and routed exclusively through the new on-airport entry and link road. Separate arriving and departing passenger traffic, with an elevated departures roadway and curbside check-in would be expanded. Parking immediately adjacent to the redeveloped Terminal 1 would be expanded. Airfield improvements would include realignment of Taxiway B and a new Taxiway A to allow more efficient flow for aircraft taxiing operations.

As part of the ADP, the Airport Authority has announced a landmark pact on its transportation infrastructure investment. On July 2, 2019, the Airport Authority announced it reached a new ten-year agreement with its airline partners for a major investment in transportation infrastructure to help alleviate traffic congestion and improve access to the San Diego International Airport. This agreement outlines $350 million for on- and potentially off-airport transportation infrastructure. These funds could potentially be used for an on-airport transit station and a transit connection to the existing regional transit system. The agreement also outlines an additional $165 million for on- and off-airport access improvement plans, including an on-airport entry road connecting from Laurel Street and Harbor Drive and the construction of a bicycle path. Additionally, the airport is preserving right-of-way for a multimodal mobility corridor to serve Rapid Bus, Trolley, or an APM system that can also potentially serve Harbor Island redevelopment projects being considered by the Port of San Diego.

8.2 Automated Passenger Mover

In December 2018, SANDAG created the Airport Connectivity Subcommittee to identify future transportation solutions for improved transit and road connectivity to the San Diego International Airport. SANDAG prepared the Airport Connectivity Analysis, October 2019, which evaluates various concepts for providing seamless, direct, and quality transit connections between airports and their downtown metropolitan areas. The automated passenger mover (APM) is a technology similar to manually operated technologies, like the Trolley, except that they operate with an automated train control system. APM systems are centrally controlled with no in-vehicle drivers. For day-to-day operations, the APM systems can operate at shorter (more frequent) headways and can travel on steeper and narrower guideways than manually operated systems. The Airport Connectivity Analysis assumed an APM system operating on a fixed-guideway (track) with level-floor vehicles. These types of APM systems are used at many airports throughout the country and world.

The evaluation in the Airport Connectivity Study considered various locations for the APM including the NAVWAR OTC site and the ITC located across Pacific Highway from the Rental Car Center, just west of I-5 roughly between Washington and Vine Streets.

For the purposes of this analysis, the APM was assumed to be located at the ITC under Alternatives 1, 2, and 3. With the planned transit center include in Alternatives 4 and 5, the APM would relocate to the NAVWAR OTC site.

With the relocation of the APM to the NAVWAR OTC Site, local roadways, particularly those serving the airport, would directly benefit from a reduction in vehicular traffic oriented to/from the airport. Grape and Hawthorn are two local constrained streets in the City of San Diego's Little Italy neighborhood that experience heavy traffic volumes, mostly due to airport traffic. Shifting many of those trips onto the APM would help alleviate congestion in the immediate vicinity of the airport. For purposes of providing a conservative analysis, no quantitative benefit was taken on the study area street system with the addition of the APM.

In March 2020, WSP prepared a technical memo forecasting ridership and vehicular trip generation estimates for the APM assuming the relocation of the APM to the NAVWAR OTC site. Ridership estimates were obtained from the Airport Connectivity Analysis to forecast two concepts for the APM: Concept 1 – NAVWAR Tunnel APM; Concept 2 – NAVWAR Surface APM. For purposes of this cumulative assessment, Concept 2 was deemed appropriate and thus included in the analysis of Alternatives 4 and 5. APM Concept 2 is forecasted to generate 11,300 ADT. Trip distribution for the APM was obtained from the SDIA ADP EIR.

A copy of the WSP technical memo providing details regarding the APM assumptions can be found in ***Appendix F***.

8.3 Cumulative Projects Summary

Table 8–1 provides a summary of the cumulative projects included in the Proposed Action alternatives analysis. It should be noted that the list below includes several projects that propose network changes that may be unfunded and/or not currently programmed. Network changes that are categorized as such were excluded from the analysis. Notably, no potential upgrades to the existing roadway network were assumed in the study area analyses.

Figure 8–1 shows the locations of the cumulative projects.

TABLE 8–1
CUMULATIVE PROJECTS

Map ID#	Project Name	Timeframe			Alternative			Location	Construction/ Implementation Timeline
		Past	Present	Reasonably Foreseeable	1	2 & 3	4 & 5		
Naval Base Point Loma (NBPL)									
1A.-1C.	1. Miscellaneous Facility Operations and Maintenance Projects (54 total)	✓	✓	✓	✓	✓	✓	OTC Site 1 and OTC Site 2	2017 – 2022+
Marine Corps Recruit Depot San Diego Projects									
4.	2. Construct an automatic car wash with vacuum bays		✓		✓	✓	✓	MCRD San Diego campus	On-going through Aug 2020
6.	3. Construct a one story Provost Marshal's Office facility with garage			✓	✓	✓	✓	MCRD San Diego campus	In planning process
7.	4. Consolidate medical and dental facilities into a 2 story building			✓	✓	✓	✓	MCRD San Diego campus	In design
City of San Diego Community Plans and Projects									
10.	5. San Diego General Plan and Environmental Impact Report (EIR)	✓	✓	✓	✓	✓	✓	Citywide	On-going through 2030+
11.	6. Midway-Pacific Highway Community Plan Update and EIR		✓	✓	✓	✓	✓	Surrounds OCT Site 1 and Site 2	2020+
	7.								
12.	8. Old Town Community Plan and EIR	✓	✓	✓	✓	✓	✓	East of OTC Site 1	2020+
13.	9. Uptown Community Plan Update and EIR		✓	✓	✓	✓	✓	East of OTC Site 1	2020+

(Continued on Next Page)

TABLE 8–1
CUMULATIVE PROJECTS

Map ID#	Project Name	Timeframe			Alternative			Location	Construction/ Implementation Timeline
(Continued from Previous Page)									
14.	10. Climate Action Plan		✓	✓	✓	✓	✓	Citywide	On-going
15.	11. Pacific Highway Cycle Tracks			✓	✓	✓	✓	From Ocean Beach Bike Path to Washington Street and along Pacific Highway from Washington Street to Sassafras Street	Currently unknown
SANDAG Plans and Projects									
16.	12. 2050 Regional Transportation Plan			✓			✓	San Diego Region	2012+-2052+
17.	13. Regional Transportation Improvement Program		✓	✓			✓	San Diego Region	2020-2025
18.	14. San Diego Forward: the Regional Plan		✓	✓			✓	Region	On-going
19.	15. Federal Regional Transportation Plan		✓	✓			✓	Region	2021+
20.	16. Sorrento to Miramar Double Tracking (Phases I & II)	✓		✓		✓	✓	Between the Sorrento Valley Station and Miramar Road.	Phase I: 2012-2014 Phase I: 2020+
21.	17. Barnett Bridge Rehabilitation			✓	✓	✓	✓	Between OTC Sites 1 and 2	Currently Unknown
22.	18. Coastal Rail Trail			✓	✓	✓	✓	East of OTC Site 1 (adjacent to railroad tracks)	Currently Unknown
23.	19. Mid-Coast Corridor Transit Project		✓				✓	East of OTC Site 1 (railroad tracks)	On-going – 2021+
24.	20. Automated People Mover			✓			✓	Within and adjacent to OTC Site 1	Currently unknown
(Continued on Next Page)									

TABLE 8–1
CUMULATIVE PROJECTS

Map ID#	Project Name	Timeframe			Alternative			Location	Construction/ Implementation Timeline
(Continued from Previous Page)									
Port of San Diego Projects									
25A-25J	21. Various construction, redevelopment, maintenance, recreation, infrastructure, and transportation projects (20 total)	✓	✓	✓		✓	✓	San Diego Bay	2017-2030+
26.	22. San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events			✓		✓	✓	San Diego Bay and Imperial Beach Oceanfront	On-going
27.	23. Integrated Planning Process – Port Master Plan Update		✓	✓		✓	✓	Throughout Port District	Planning Phase
Miscellaneous Plans and Projects									
29.	24. San Diego International Airport – Airport Development Plan			✓		✓	✓	San Diego International Airport	2021-2024
30.	25. Navy Broadway Complex/Manchester Gateway Development Project		✓			✓	✓	Broadway/Harbor Drive/Pacific Coast Highway	2018-2021
31.	26. Hacienda Heights Apartments		✓			✓	✓	3975 Old Town Avenue	Under construction
33A.-33C.	27. Construction of Three Liberty Station Hotels		✓			✓	✓	North Harbor Drive at Kincaid Rd.	Two hotels completed (2019); one under construction
34.	28. Midway Post Office Redevelopment			✓	✓	✓	✓	2535 Midway Drive	Currently unknown
35.	29. Sports Arena Redevelopment			✓		✓	✓	3500 Sports Arena Blvd	Currently unknown
(Continued on Next Page)									

TABLE 8–1
CUMULATIVE PROJECTS

Map ID#	Project Name	Timeframe			Alternative			Location	Construction/ Implementation Timeline
(Continued from Previous Page)									
36.	30. UC San Diego Long Range Development Plan – Hillcrest Campus			✓		✓	✓	Uptown/Hillcrest	2020-2030
37.	31. Riverwalk San Diego			✓		✓	✓	Mission Valley with bicycle and pedestrian connections near Navy OTC	2022-2028
38.	32. Hotel Redevelopment			✓		✓	✓	3330 Rosecrans Street	2020+
39.	33. Redevelopment Project			✓		✓	✓	3711 Sports Arena Blvd	2020+

Source: CARDNO, LLG, April 30, 2020

General Notes:

1. The cumulative transportation analysis provided in this report evaluates the incorporation of the geographic extent of all resources (i.e. Alternatives 4 & 5) given the study area extends beyond the scope or immediate area of impact associated with the Proposed Action alternatives.
2. Map ID# equates to the cumulative project numbers shown on *Figure 8–1*. Cumulative projects not listed in *Table 8–1* were assumed to not affect the transportation resource area.

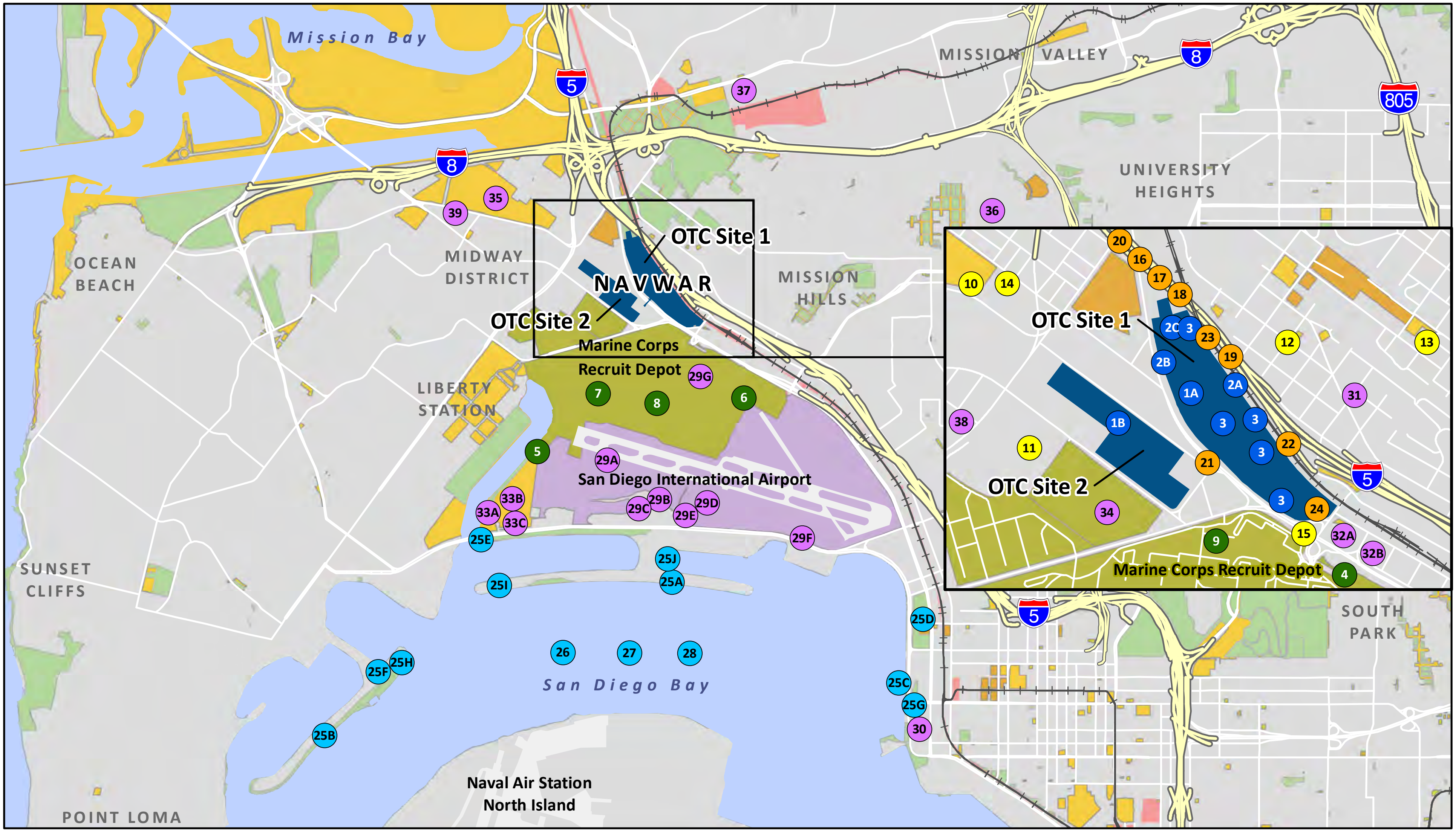
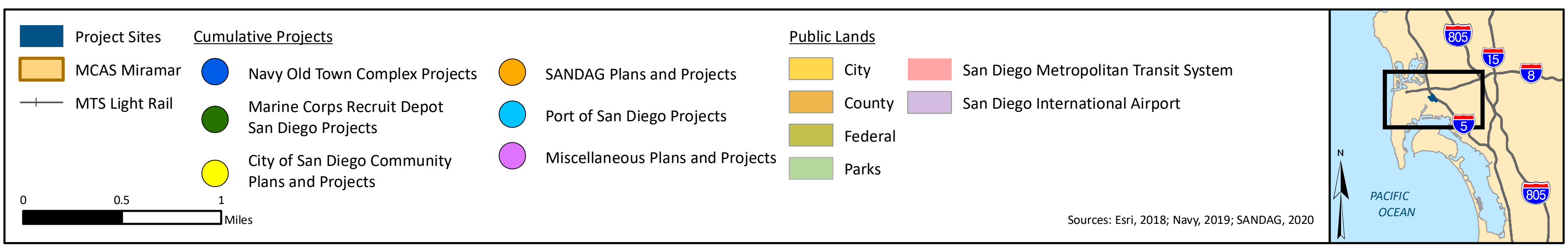


Figure 8-1 Cumulative Projects Location Map



9.0 TRAFFIC MODELING

9.1 Year 2050 Traffic Volumes

9.1.1 *Year 2050 No-Action Alternative*

The Year 2050 conditions represent a future baseline with the effects of cumulative development over the existing on-the-ground conditions without development of the Proposed Action alternative. This condition is considered the Year 2050 No-Action Alternative as it assumed the existing NAVWAR operations would continue into the future. The Year 2050 No-Action Alternative parameters were developed over several months through the coordination of WSP and SANDAG. Several outside influencing factors were considered for inclusion in the forecast Year 2050. WSP and SANDAG worked with local agencies and reviewed individual cumulative development projects, Community Plans, Specific Plans, Master Plans, and Development Plans for the surrounding area. **A complete discussion of the Year 2050 cumulative condition is provided in *Section 8.0* of this report.** The results of that effort were inputted into a SANDAG Series 13 Travel Demand Model to forecast Year 2050 traffic volumes.

Appendix G contains a breakdown of the various model assumptions for the SANDAG traffic model.

Figure 9–1 shows the Year 2050 No-Action Alternative traffic volumes.

As discussed in *Section 8.0* of this report, the addition of the Automated Passenger Mover (APM) was considered a cumulative project that would be provided should a transit center be provided on the OTC site. A secondary baseline condition was developed to account for this network connection: Year 2050 No-Action Alternative with Automated Passenger Mover. Data provided by WSP for the Concept 2 Modeled Ridership was incorporated into the Year 2050 assumptions. The trip generation from the *Ridership & Trip Generation Estimates for Proposed Automated People Mover*, prepared by WSP, March 31, 2020 and the trip distribution from the Airport Development Plan were used to assign APM traffic to the study area. It should be noted the Year 2050 No-Action Alternative with APM was used as the baseline comparison for Alternative 4 and 5 which include the Project-proposed transit center.

Appendix F contains a copy of the *Ridership & Trip Generation Estimates for Proposed Automated People Mover*, prepared by WSP, March 31, 2020.

Figure 9–2 shows the Year 2050 No-Action Alternative with Automated Passenger Mover traffic volumes.

9.1.2 *Year 2050 Proposed Action Alternatives*

Section 2.0 of this report discusses the details on each alternative being considered for the Proposed Action. The land use quantities for each Proposed Action alternative were inputted into their respective Year 2050 traffic models. For Alternatives 4 and 5, a transit center was assumed to be constructed as part of the Proposed Action. In addition, with the inclusion of the transit center under

Alternatives 4 and 5, an Automated Passenger Mover was assumed as a cumulative project under Year 2050 baseline conditions.

9.1.3 *Year 2050 Traffic Volume Forecast*

Daily traffic volumes were reviewed from each the traffic models for the No-Action and Proposed Action alternatives. Once the ADTs were finalized for use in the analysis, the peak hour turning movement volumes at an intersection were estimated from Year 2050 ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future. The figures depicting traffic volumes for each Year 2050 scenario are listed below.

Figure 9–3 shows the Year 2050 with Alternative 1: Navy Recapitalization at OTC traffic volumes.

Figure 9–4 shows the Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization traffic volumes.

Figure 9–5 shows the Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization traffic volumes.

Figure 9–6 shows the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center traffic volumes.

Figure 9–7 shows the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center traffic volumes.

9.2 Near-Term Year 2030 Traffic Volumes

9.2.1 *Near-Term Year 2030 Baseline*

The Near-Term Year 2030 Baseline was developed using the Year 2050 No-Action Alternative traffic model. The annualized growth between existing Year 2020 traffic counts and the forecast Year 2050 was applied to existing ground counts for a 10-year period to arrive at baseline Year 2030 traffic volumes.

The peak hour turning movement volumes at an intersection were estimated from Year 2030 ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future.

Figure 9–8 depicts the Near-Term Year 2030 traffic volumes.

9.2.2 *Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%)*

A portion of Alternative 2 Higher-density Mixed-use Revitalization represents the most intense land use development and resulting trip generation (without the transit center) that could partially develop within a 10-year timeframe. Within the 10-year timeframe, it was assumed approximately 25% of Alternative 2 would develop by Year 2030. The traffic generated under this scenario was then added to the Year 2030 baseline traffic volumes to arrive at Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) traffic volumes.

Figure 9–9 depicts the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) traffic volumes.

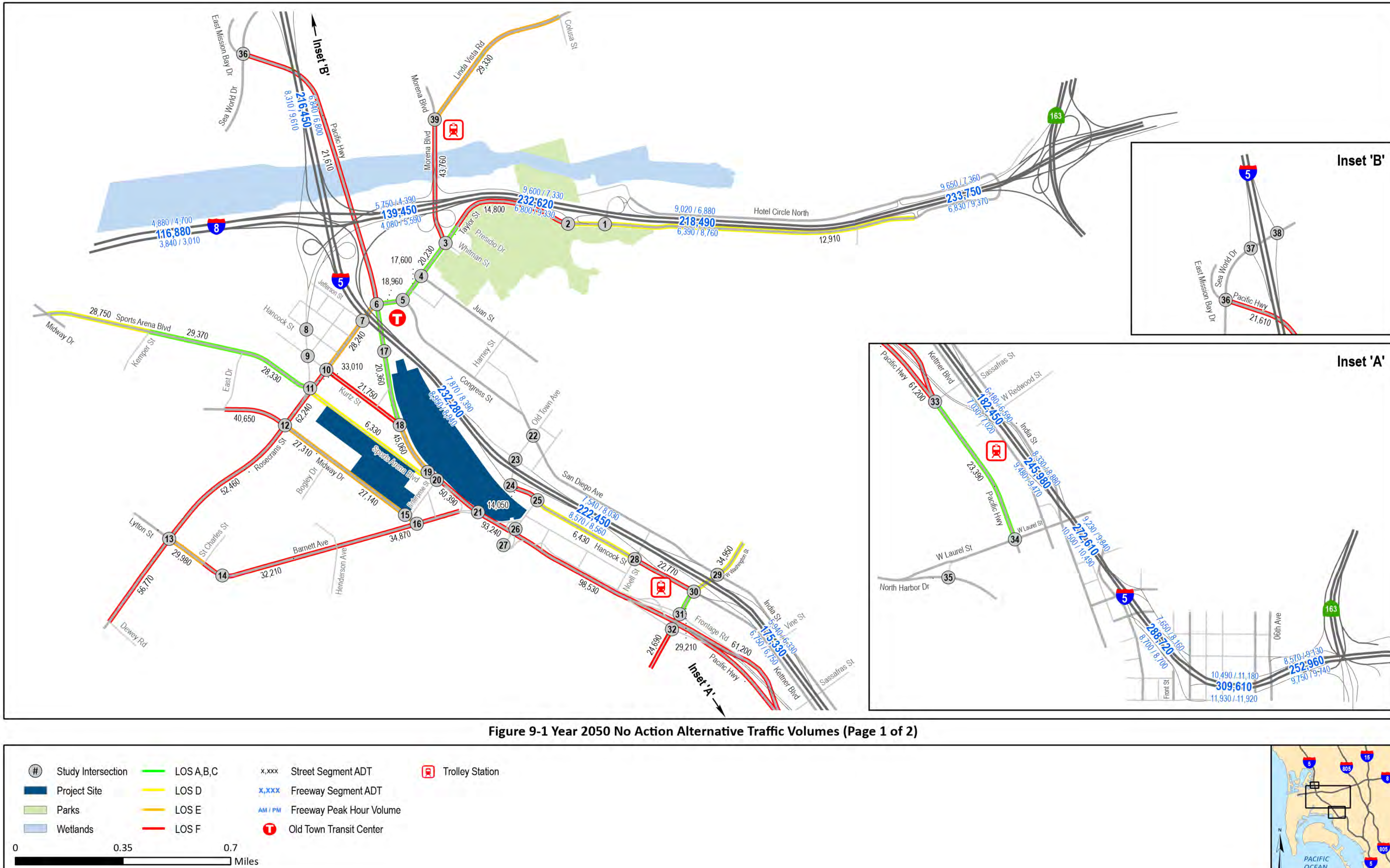


Figure 9-1 Year 2050 No Action Alternative Traffic Volumes (Page 1 of 2)

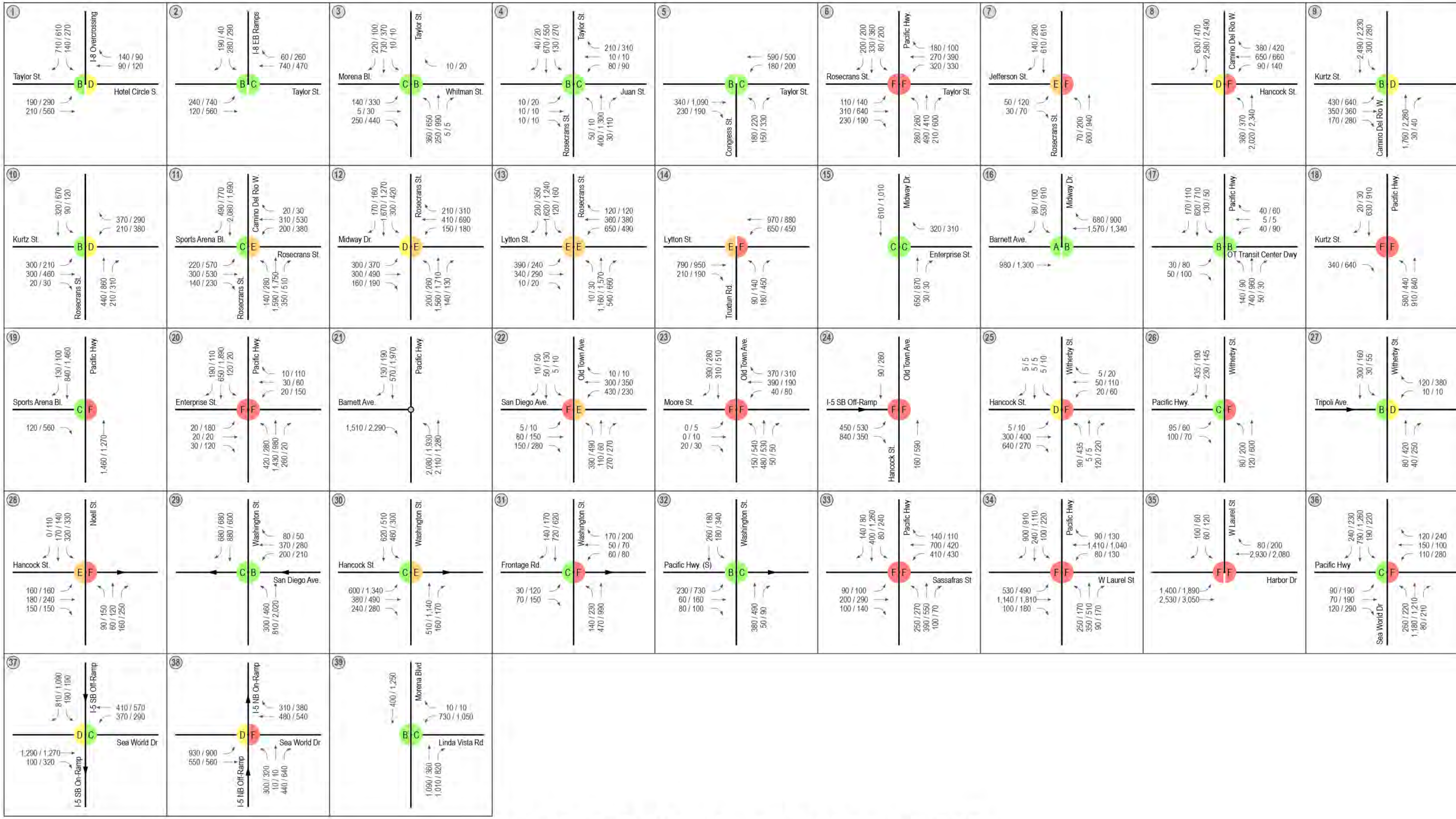


Figure 9-1 Year 2050 No Action Alternative Traffic Volumes (Page 2 of 2)

# Study Intersections	LOS A,B,C
Intersection AM/PM Peak Hour Volumes	LOS D
LOS AM	LOS E
LOS PM	LOS F

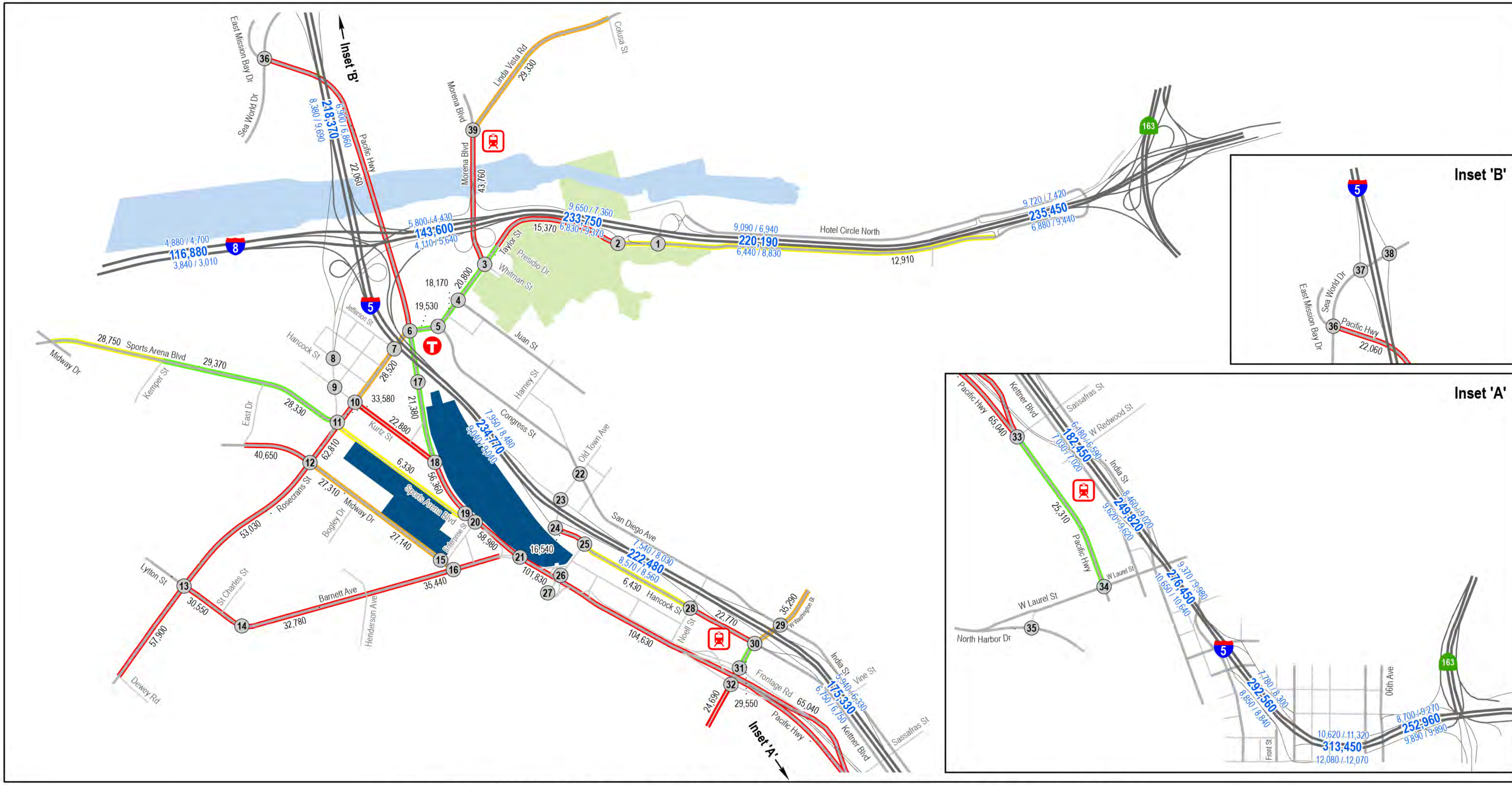
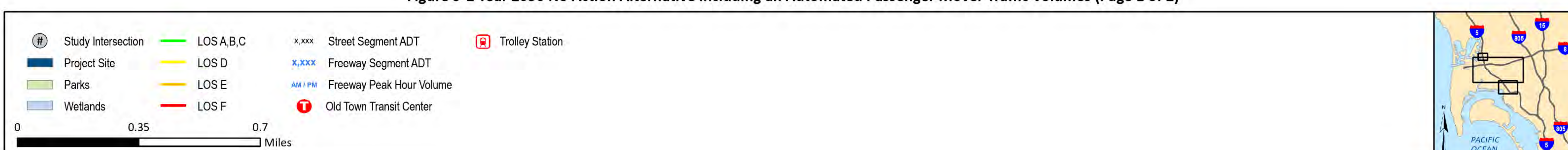


Figure 9-2 Year 2050 No Action Alternative including an Automated Passenger Mover Traffic Volumes (Page 1 of 2)



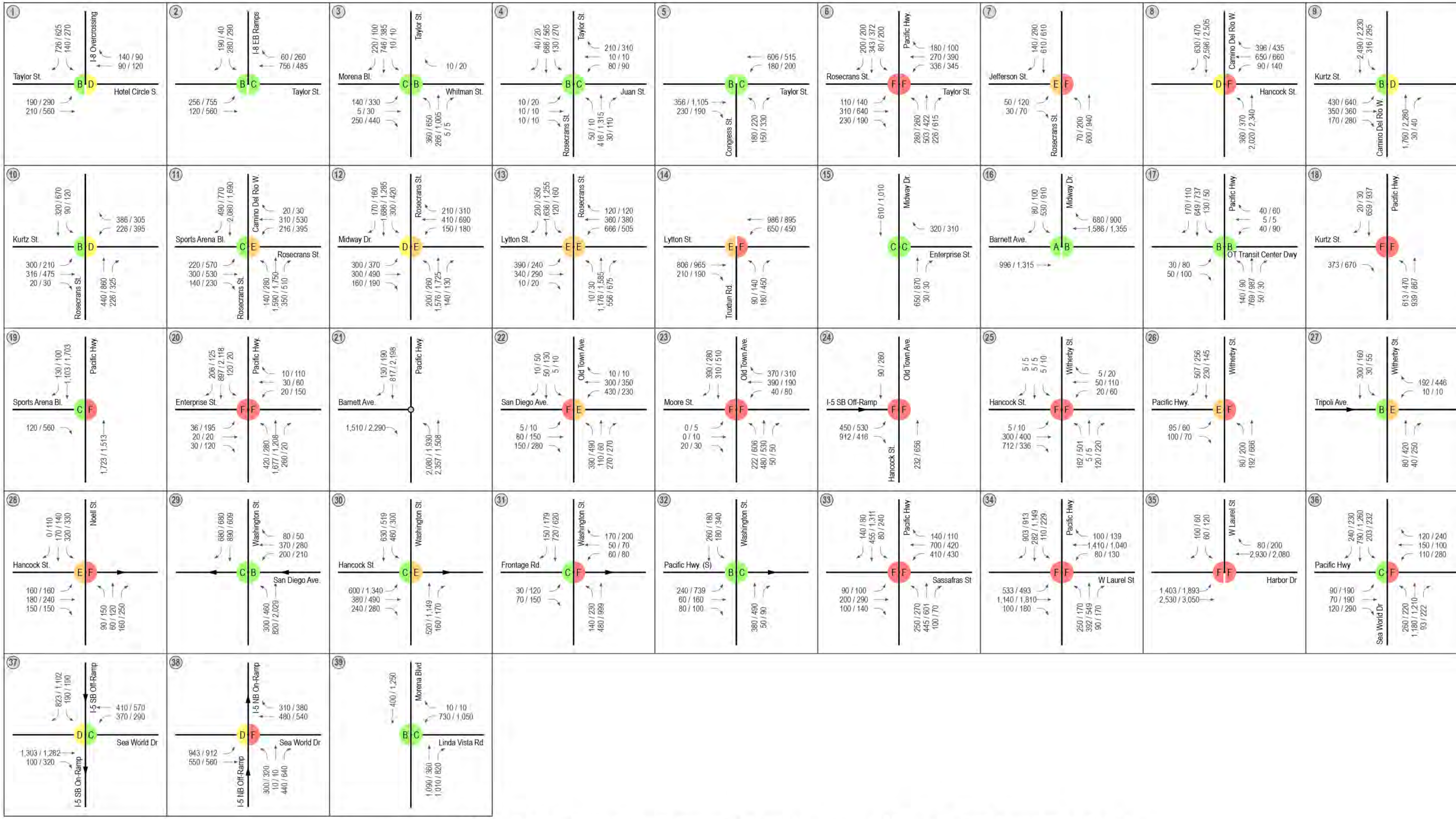


Figure 9-2 Year 2050 No Action Alternative including an Automated Passenger Mover Traffic Volumes (Page 2 of 2)

Study Intersections

Intersection AM/PM Peak Hour Volumes

LOS AM

LOS PM

LOS A,B,C

LOS D

LOS E

LOS F

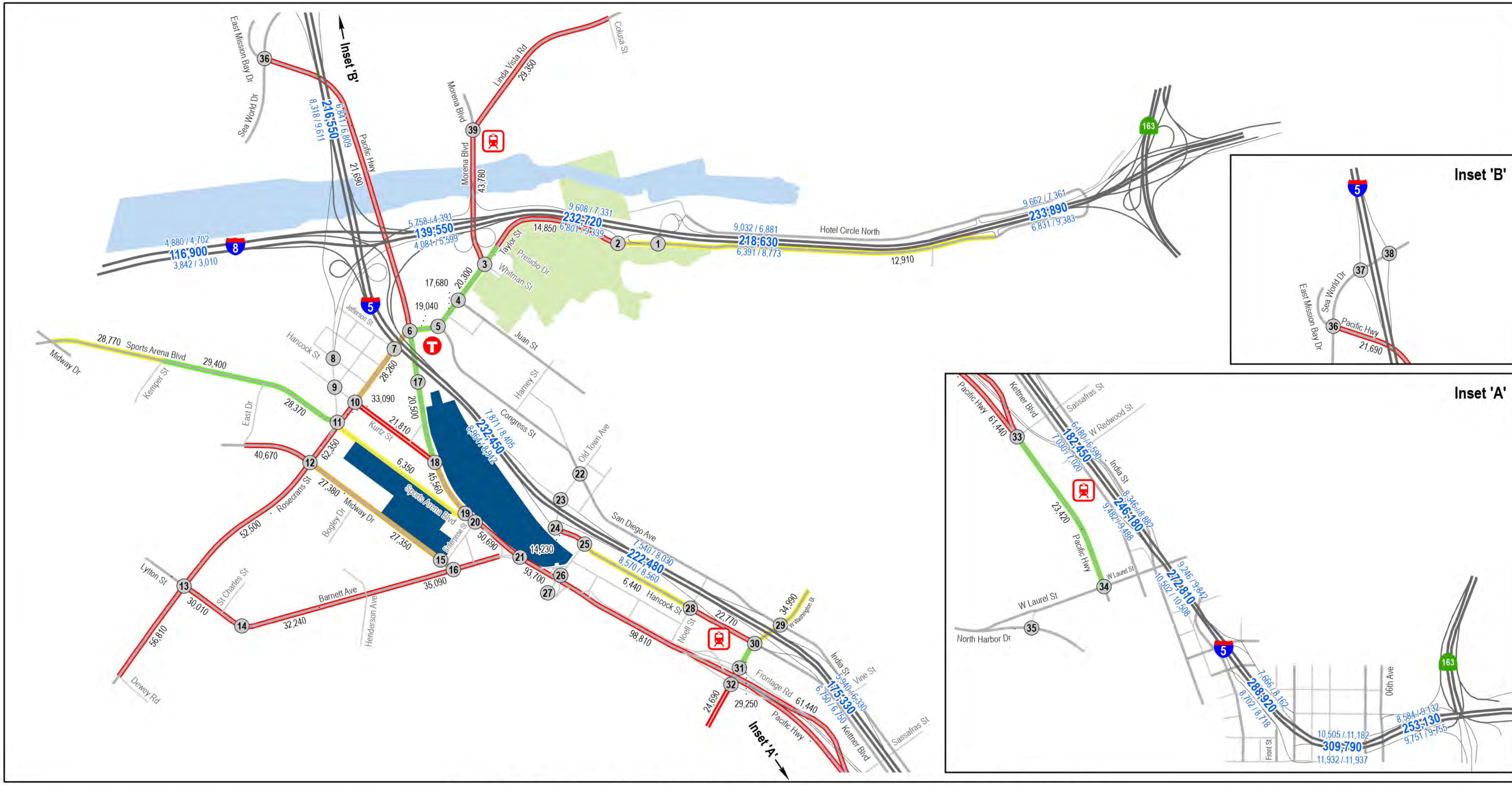
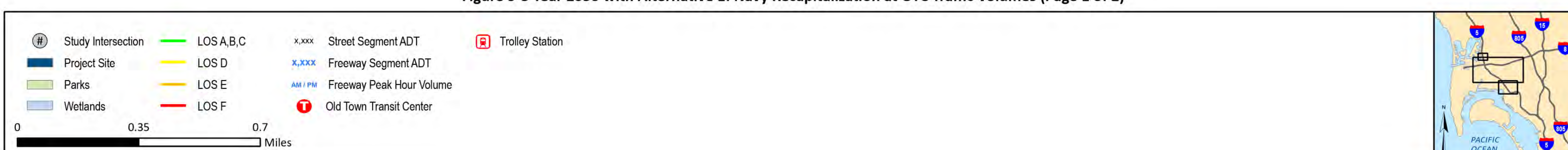


Figure 9-3 Year 2050 with Alternative 1: Navy Recapitalization at OTC Traffic Volumes (Page 1 of 2)



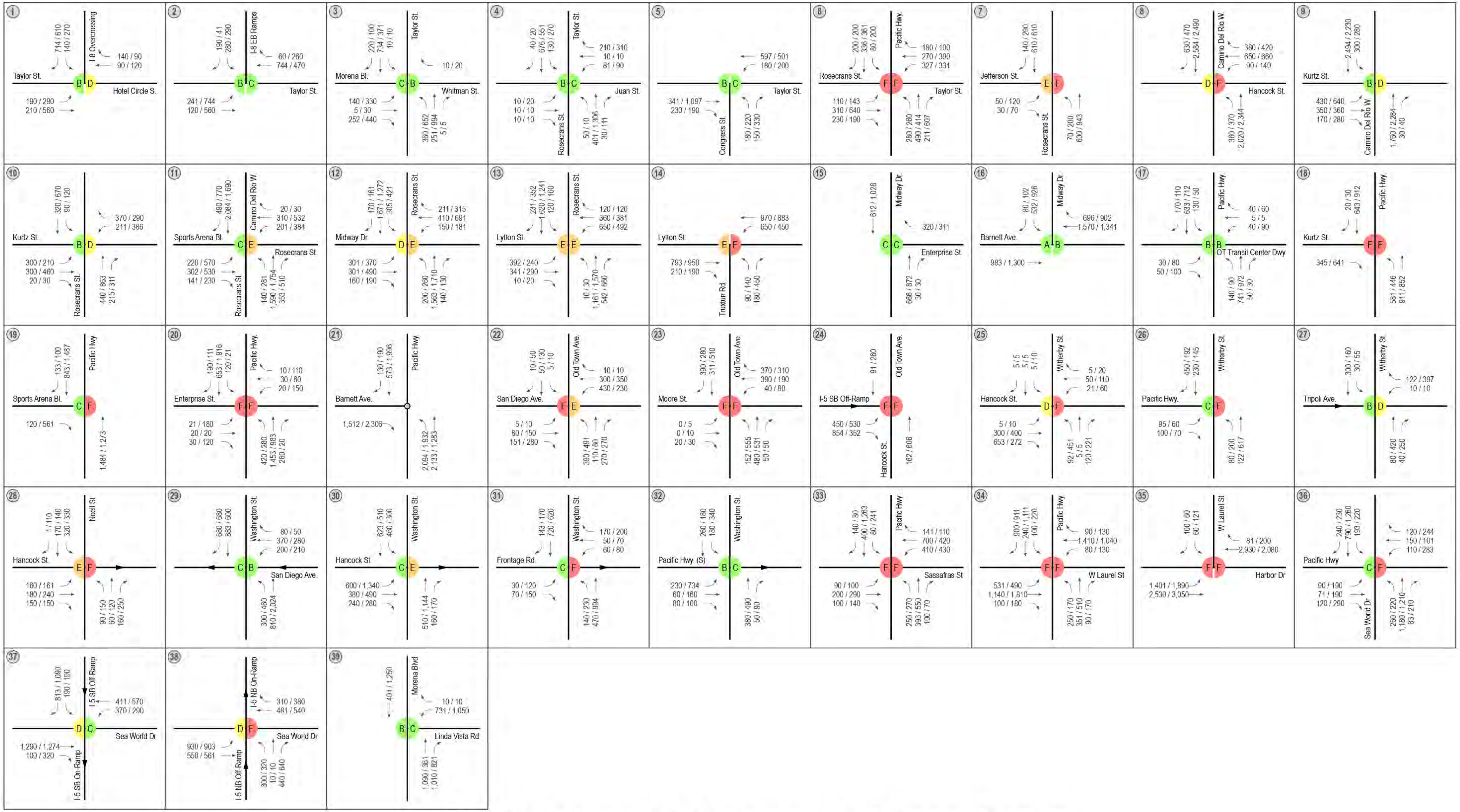


Figure 9-3 Year 2050 with Alternative 1: Navy Recapitalization at OTC Traffic Volumes (Page 2 of 2)

# Study Intersections	LOS A,B,C
Intersection AM/PM Peak Hour Volumes	LOS D
LOS AM	LOS E
LOS PM	LOS F

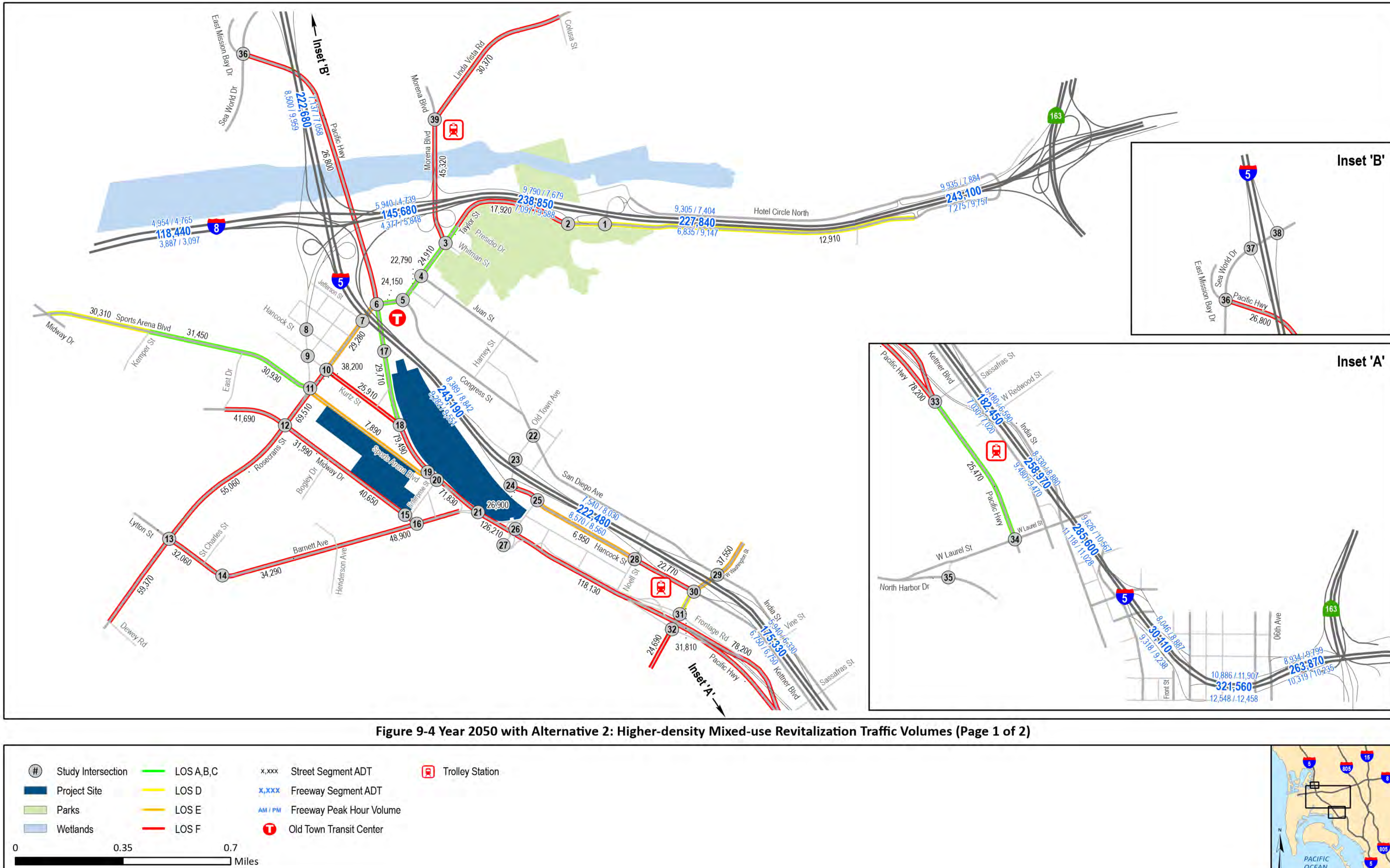


Figure 9-4 Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization Traffic Volumes (Page 1 of 2)

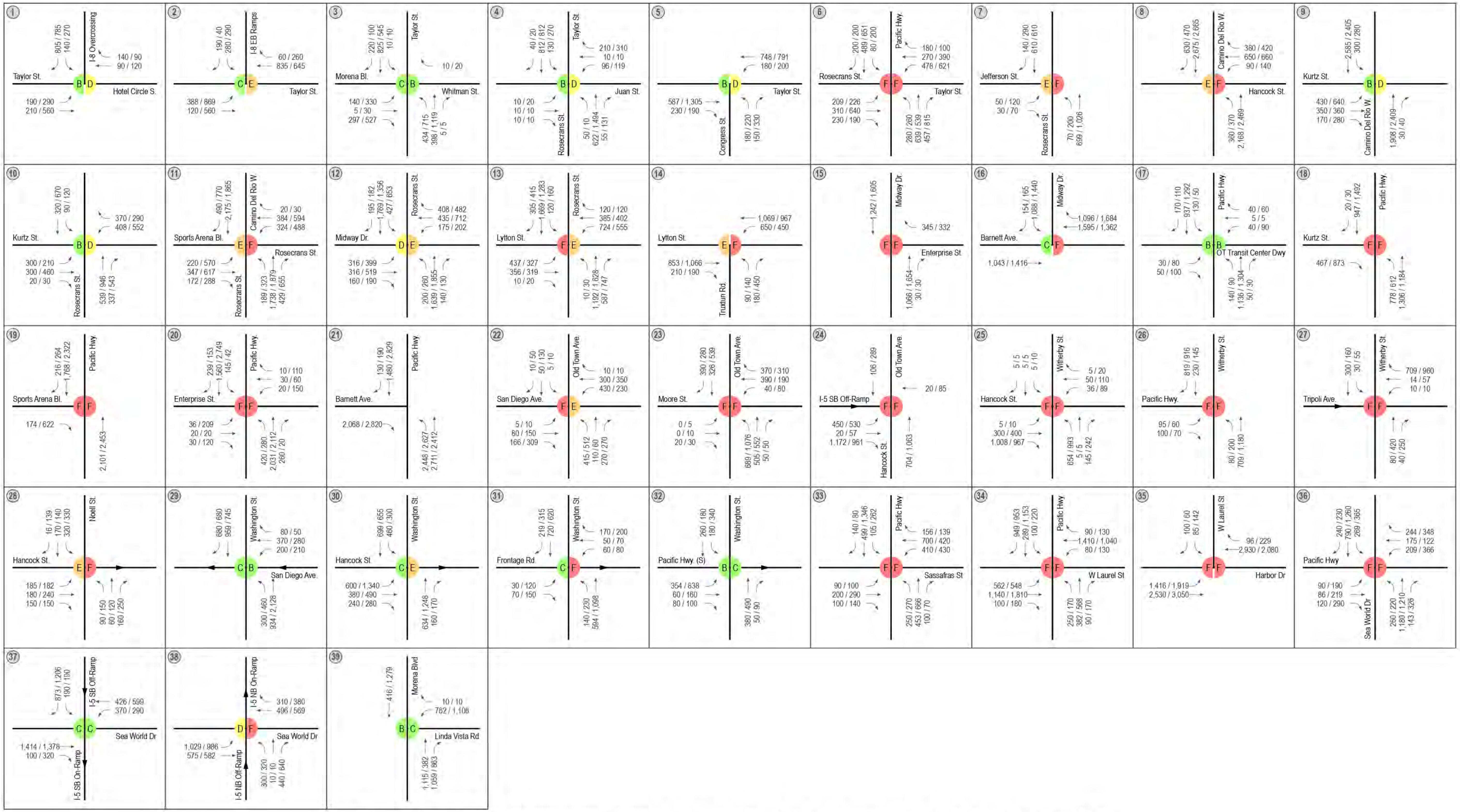


Figure 9-4 Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization Traffic Volumes (Page 2 of 2)

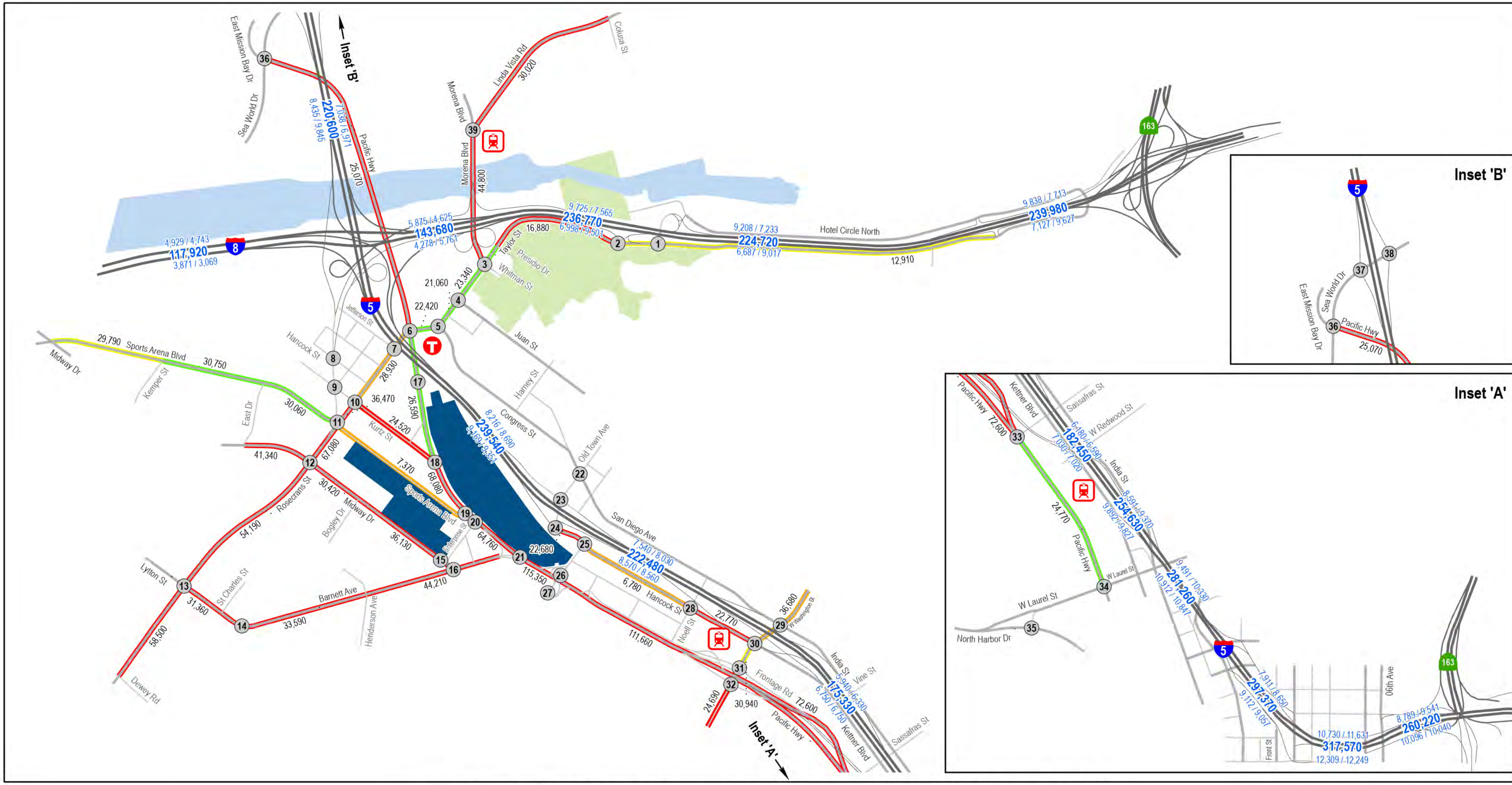


Figure 9-5 Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization Traffic Volumes (Page 1 of 2)

Study Intersection
Project Site
Parks
Wetlands
LOS A,B,C
LOS D
LOS E
LOS F
x,xxx Street Segment ADT
x,xxx Freeway Segment ADT
AM / PM Freeway Peak Hour Volume
Old Town Transit Center
Trolley Station

0 0.35 0.7 Miles

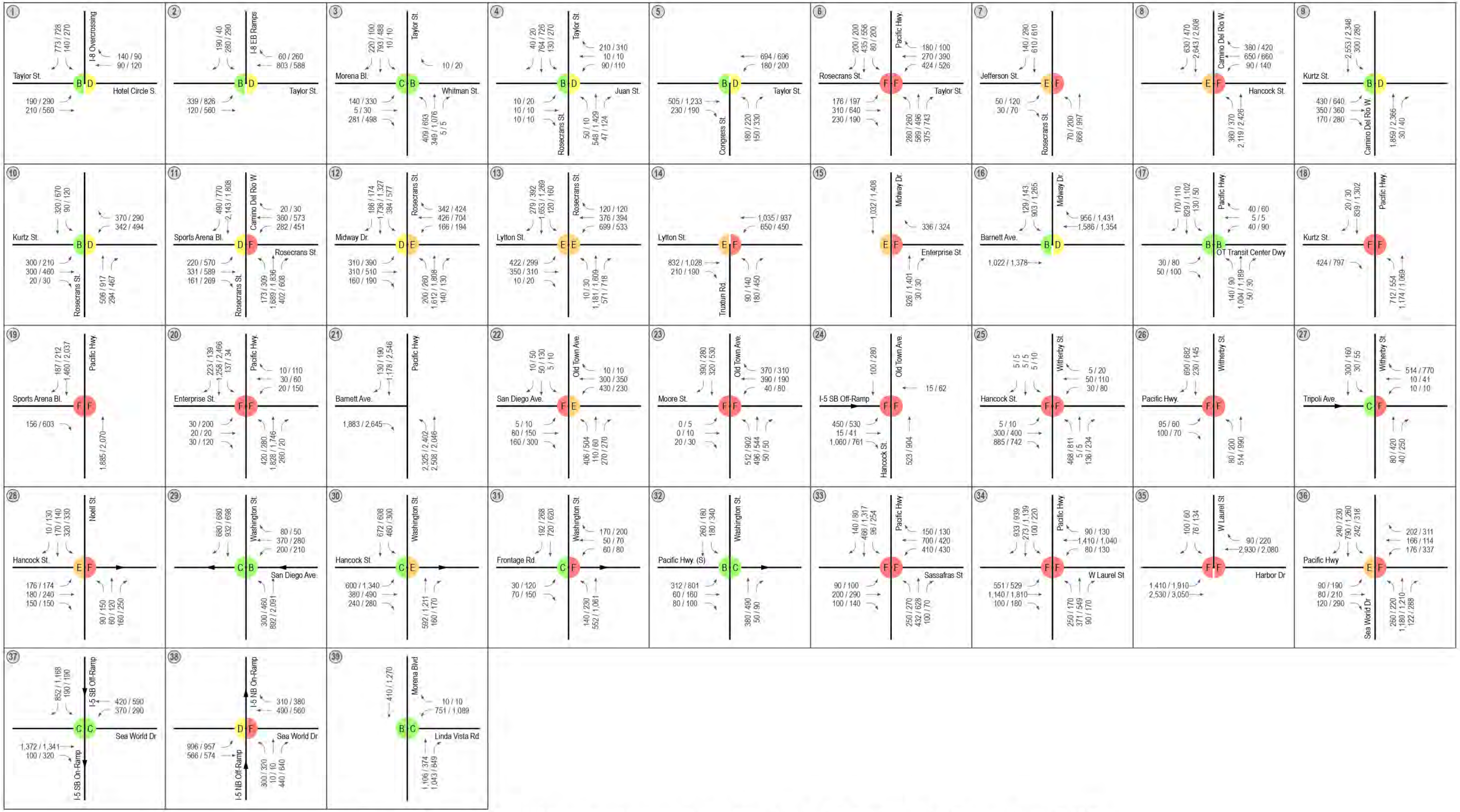


Figure 9-5 Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization Traffic Volumes (Page 2 of 2)

# Study Intersections	LOS A,B,C
Intersection AM/PM Peak Hour Volumes	LOS D
LOS AM	LOS E
LOS PM	LOS F

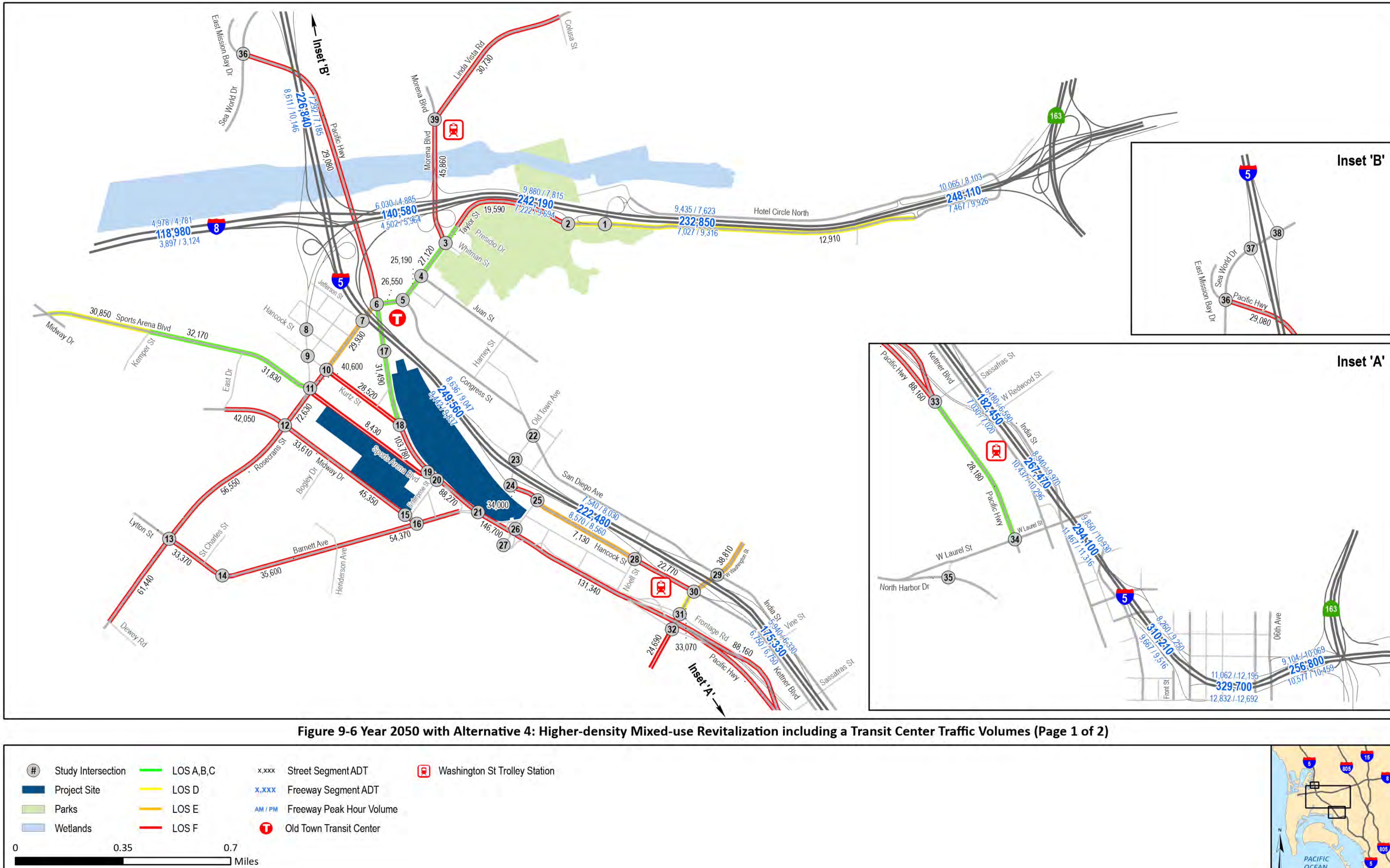


Figure 9-6 Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 1 of 2)

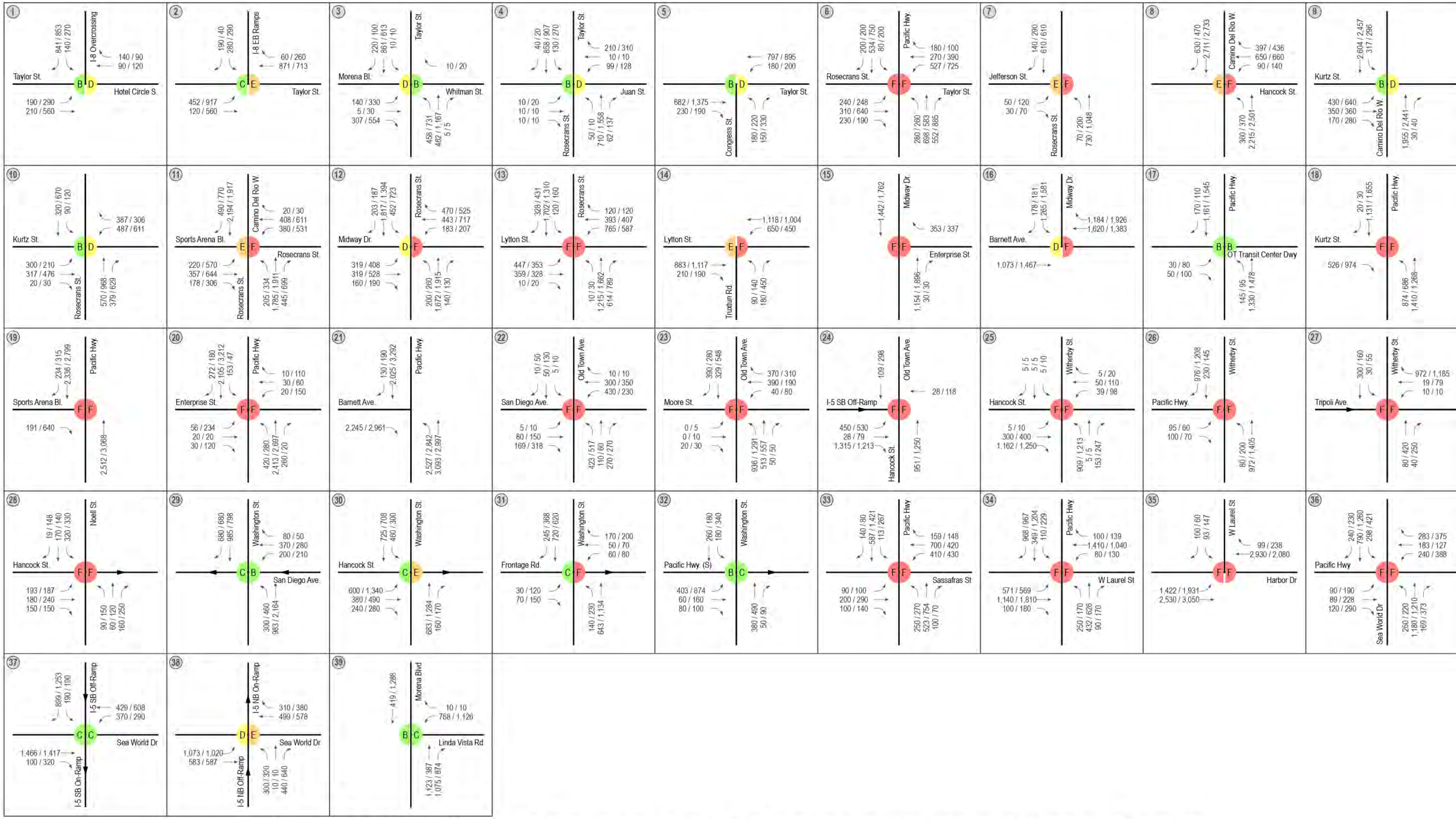


Figure 9-6 Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 2 of 2)

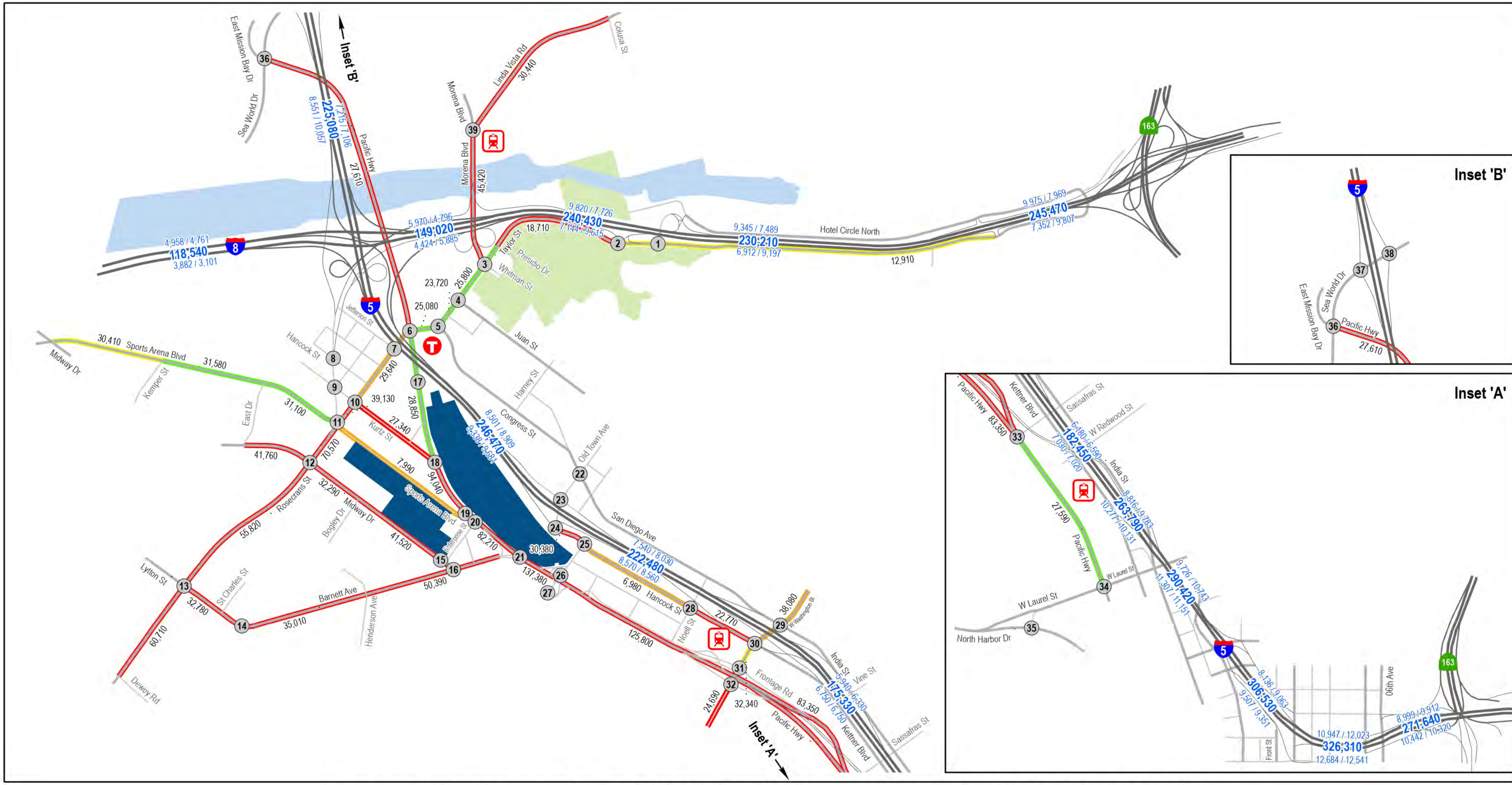


Figure 9-7 Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 1 of 2)

# Study Intersection	LOS A,B,C	x,xxx Street Segment ADT
Project Site	LOS D	x,xxx Freeway Segment ADT
Parks	LOS E	AM / PM Freeway Peak Hour Volume
Wetlands	LOS F	Old Town Transit Center
		Trolley Station

0 0.35 0.7 Miles

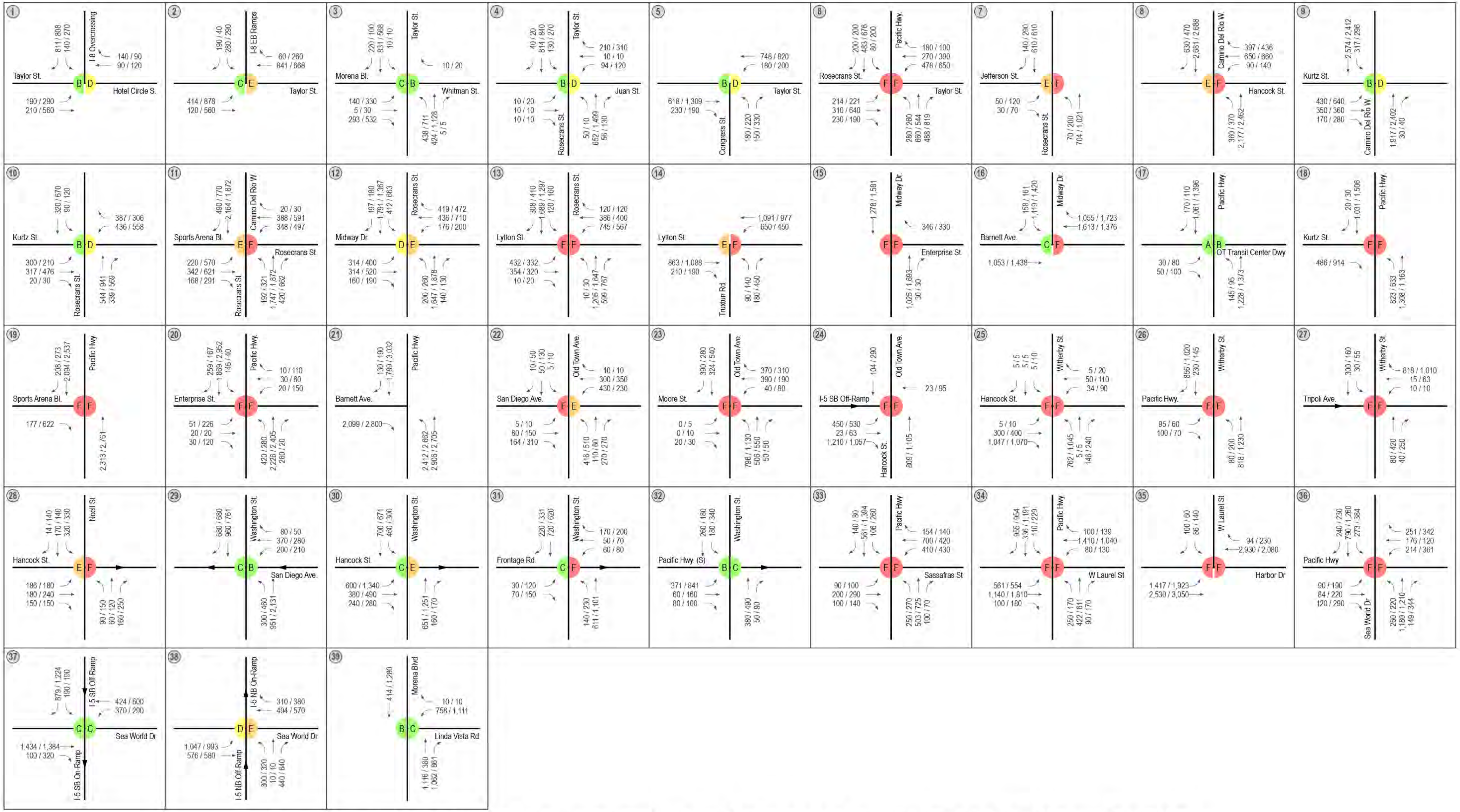
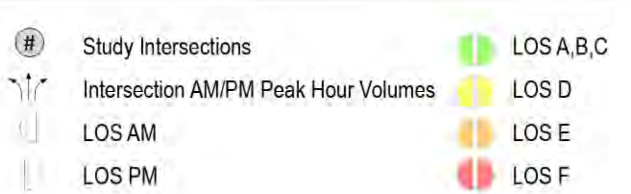


Figure 9-7 Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center Traffic Volumes (Page 2 of 2)



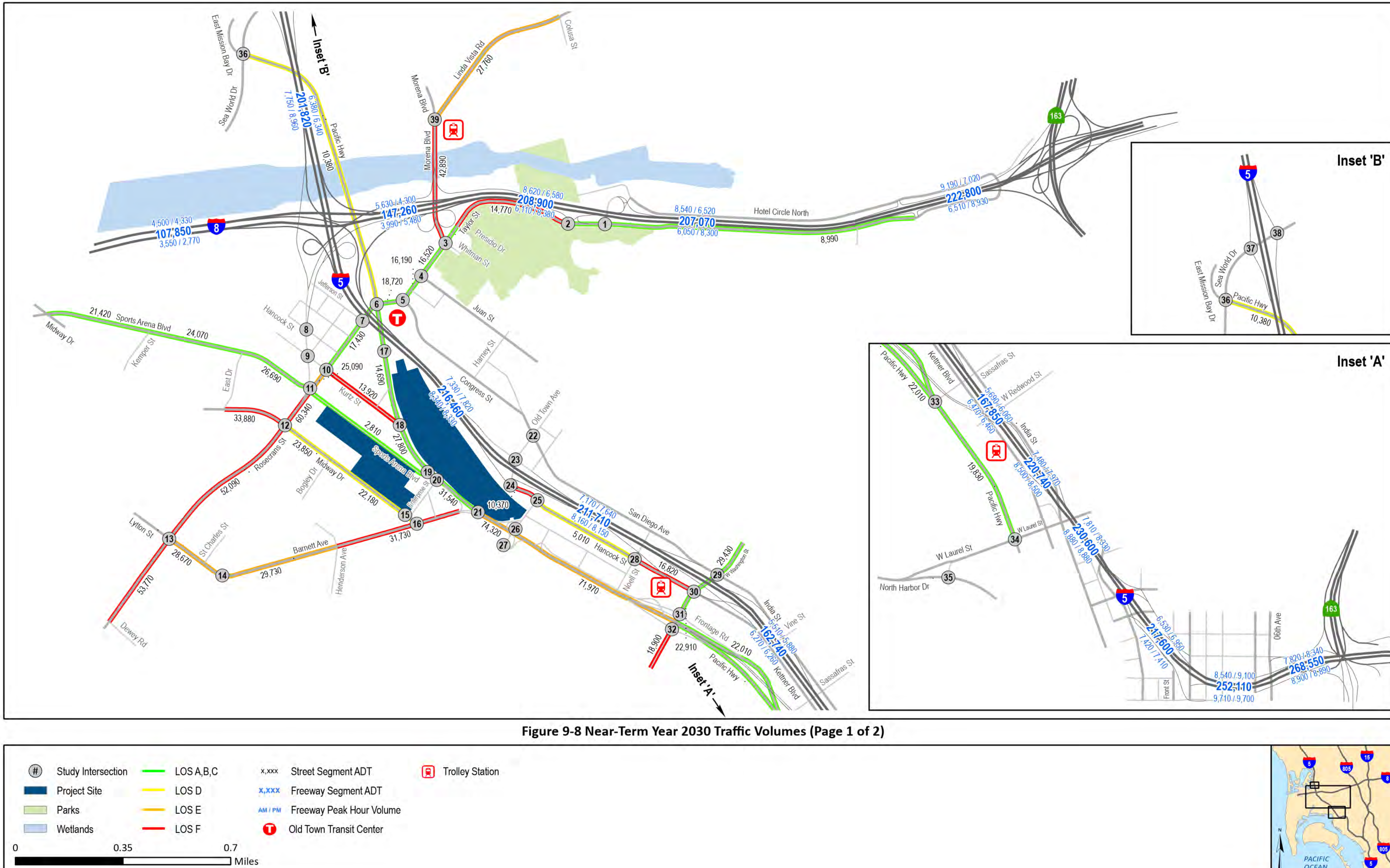


Figure 9-8 Near-Term Year 2030 Traffic Volumes (Page 1 of 2)

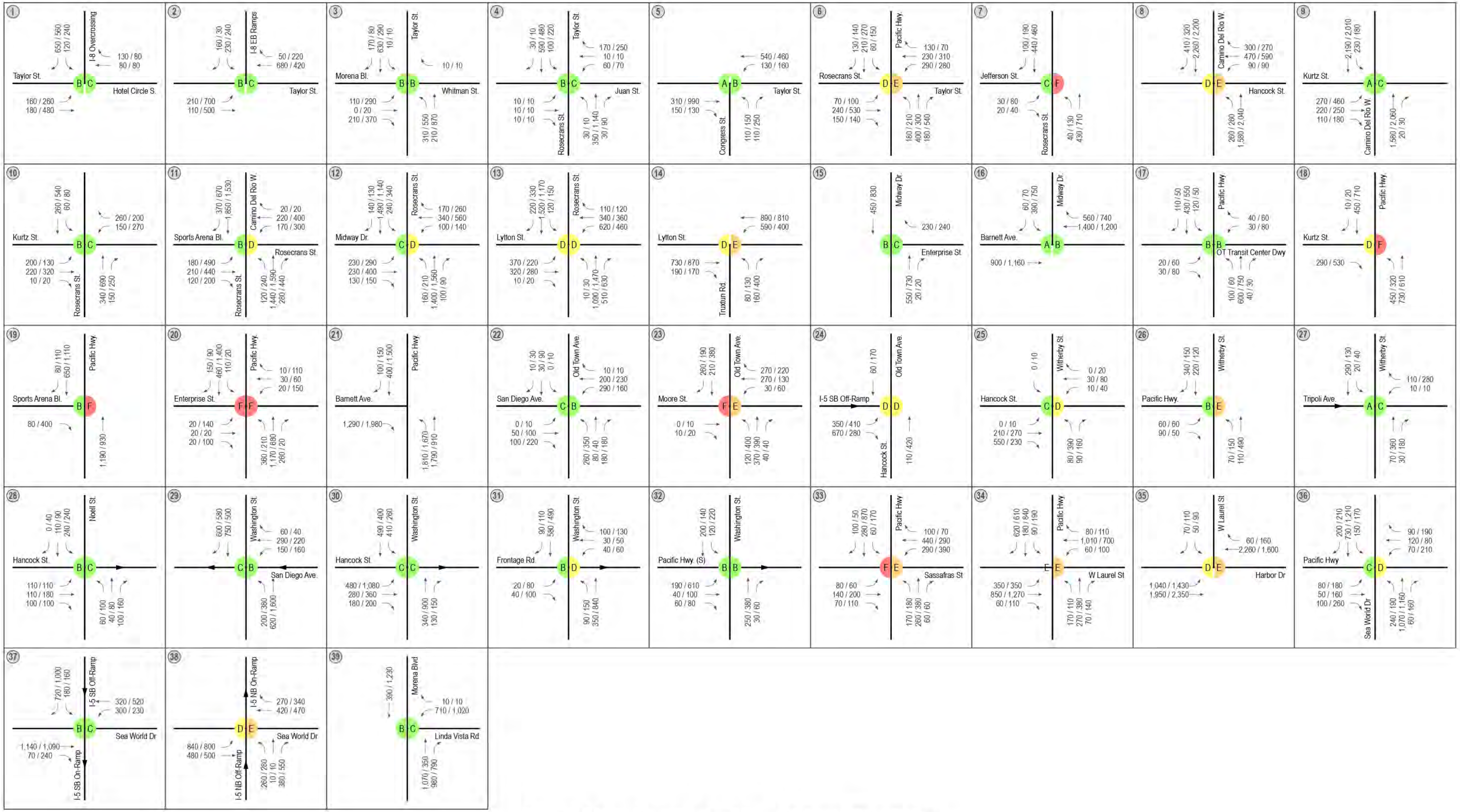


Figure 9-8 Near-Term Year 2030 Traffic Volumes (Page 2 of 2)

#	Study Intersections		LOS A,B,C
	Intersection AM/PM Peak Hour Volumes		LOS D
	LOS AM		LOS E
	LOS PM		LOS F

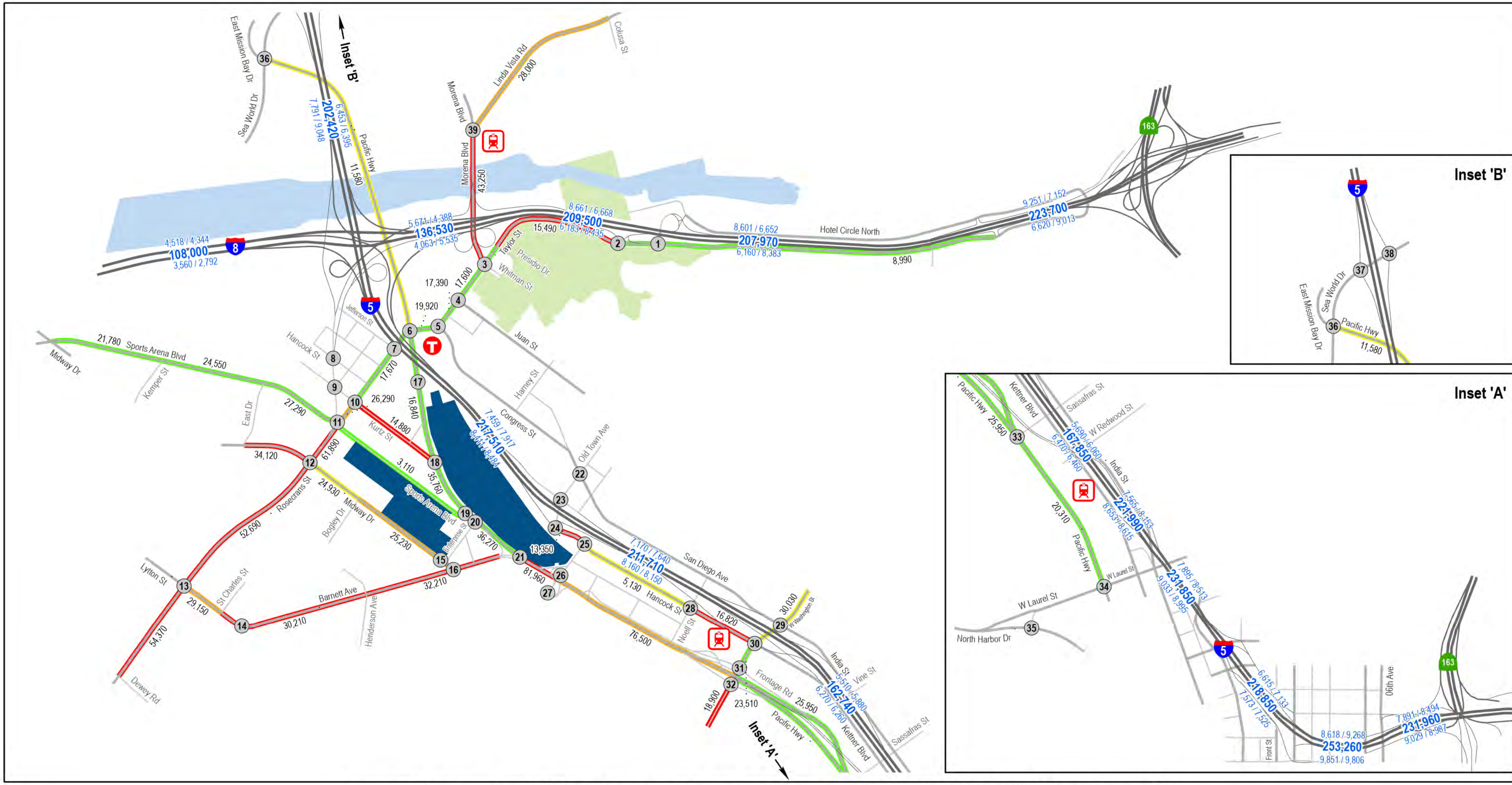


Figure 9-9 Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) Traffic Volumes (Page 1 of 2)

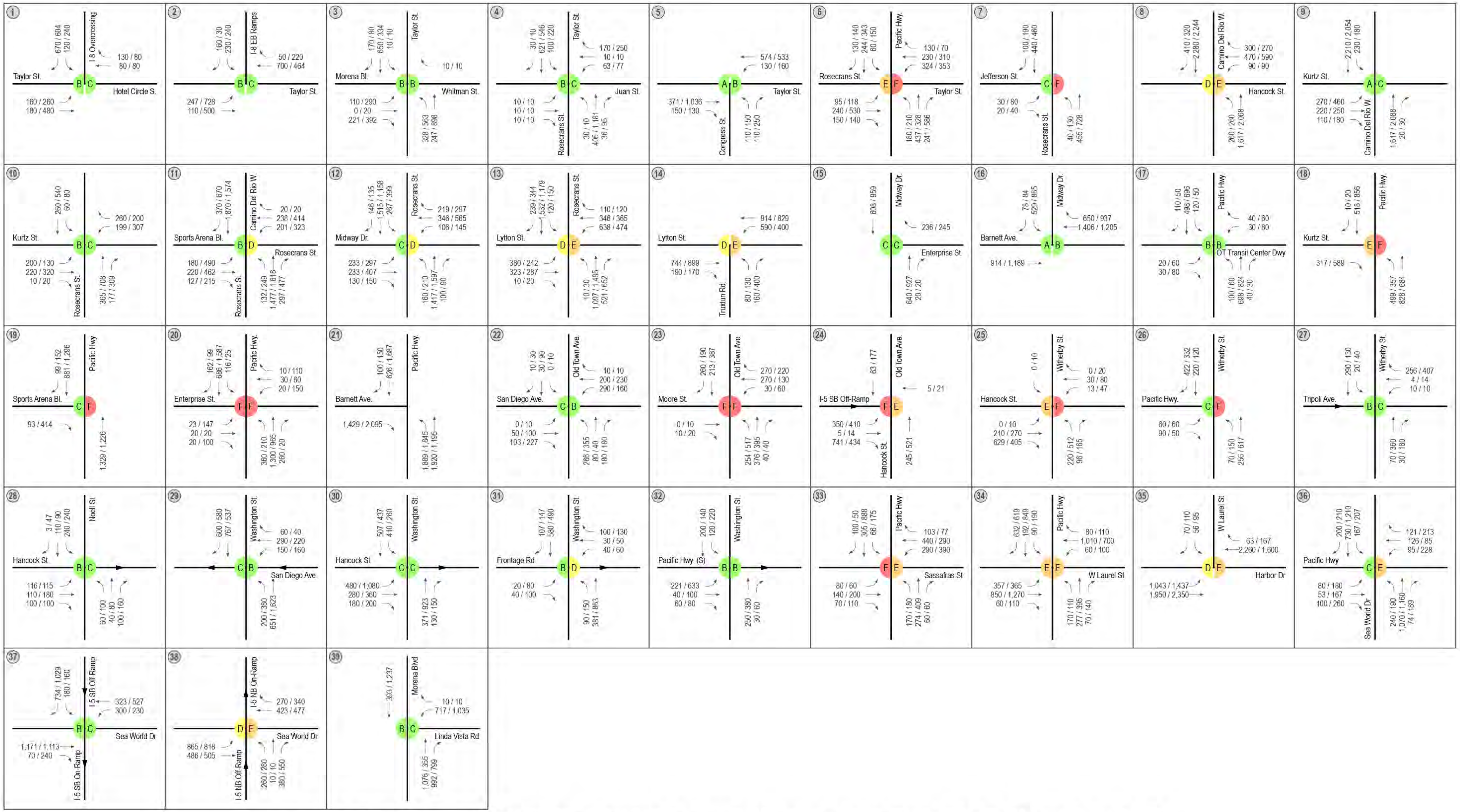


Figure 9-9 Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) Traffic Volumes (Page 2 of 2)

# Study Intersections	LOS A,B,C
Intersection AM/PM Peak Hour Volumes	LOS D
LOS AM	LOS E
LOS PM	LOS F

10.0 YEAR 2050 NO-ACTION ALTERNATIVE ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 No-Action Alternative conditions. No changes to the street network over existing conditions were assumed in the analysis.

10.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 No-Action Alternative conditions. ***Table 10–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F:

- Intersection #6 Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours
- Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours
- Intersection #8. Camino Del Rio W. / Hancock Street – LOS F during the p.m. peak hour
- Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E during the p.m. peak hour
- Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour
- Intersection #13. Rosecrans Street / Lytton Street – LOS E during the a.m. and p.m. peak hours
- Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours
- Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours
- Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the p.m. peak hour
- Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours
- Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours
- Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours
- Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours
- Intersection #25. Witherby Street / Hancock Street – LOS F during the p.m. peak hour
- Intersection #26. Witherby Street / Pacific Highway – LOS F during the p.m. peak hour
- Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hours

- Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour
- Intersection #31. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour
- Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours
- Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #36. Pacific Highway / Sea World Drive – LOS F during the p.m. peak hour
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Appendix H contains the intersection analysis worksheets for the Year 2050 No-Action Alternative scenario.

10.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 No-Action Alternative. ***Table 10–2*** reports the Year 2050 No-Action Alternative street segment operations on a daily basis. The following segments are calculated to operate at LOS E or F:

- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor St (LOS F)
- Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS E)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS E)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS E)

- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)

10.3 Peak Hour Freeway Segment Operations

Freeway segment analyses were conducted in the study area under Year 2050 No-Action Alternative conditions. ***Table 10–3*** reports the Year 2050 No-Action Alternative peak hour freeway segment operations. The following segments are calculated to operate at LOS E or F:

- Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #10. I-5: 6th Avenue to SR-163, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)
- Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)
- Freeway Segment #15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)

Appendix I contains the detailed HCS calculations sheets for the Year 2050 No-Action Alternative scenario.

10.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 No-Action Alternative conditions. ***Table 10–4*** reports the Year 2050 No-Action Alternative ramp meter operations.

- Ramp Meter #1. Moore Street/ I-5 NB On-Ramp – Delays of 23/35 minutes and queues of 130/187 vehicles during the a.m. / p.m. peak hours are calculated at the *Moore Street / NB I-5 On-Ramp* under Year 2050 No-Action Alternative.

The delay at this ramp meter is more than 15 minutes. Therefore, this on-ramp is expected to operate at an unacceptable delay under Year 2050 No-Action Alternative.

TABLE 10–1
YEAR 2050 NO-ACTION ALTERNATIVE INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative	
			Delay [a]	LOS [b]
1. Taylor St/ Hotel Circle South	AWSC [c]	AM PM	11.4 29.4	B D
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	15.6 27.5	B C
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	21.3 14.5	C B
4. Taylor St/ Juan St	Signal	AM PM	15.0 34.1	B C
5. Congress St/ Taylor St	Signal	AM PM	12.9 33.1	B C
6. Pacific Hwy/ Rosecrans St/Taylor St	Signal	AM PM	95.9 97.0	F F
7. Rosecrans St/ Jefferson St	TWSC [d]	AM PM	43.5 816.6	E F
8. Camino Del Rio W/ Hancock St	Signal	AM PM	52.3 139.2	D F
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	15.7 47.8	B D
10. Rosecrans St/ Kurtz St	Signal	AM PM	14.6 47.0	B D
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	25.7 72.4	C E
12. Rosecrans St/ Midway Dr	Signal	AM PM	37.2 57.3	D E
13. Rosecrans St/ Lytton St	Signal	AM PM	62.9 60.4	E E
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	60.6 107.4	E F
15. Midway Dr/ Enterprise St	Signal	AM PM	21.6 22.7	C C
16. Barnett Ave/ Midway Dr	Signal	AM PM	9.7 14.1	A B
(Continued on Next Page)				

TABLE 10–1
YEAR 2050 NO-ACTION ALTERNATIVE INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.6 12.8	B B
18. Pacific Hwy/ Kurtz St	Signal	AM PM	150.0 303.1	F F
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	16.6 433.8	C F
20. Pacific Hwy/ Enterprise St	Signal	AM PM	141.5 232.9	F F
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*	
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E
23. Old Town Ave/ Moore St	Signal	AM PM	620.4 183.9	F F
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	106.6 97.5	F F
25. Witherby St/ Hancock St	AWSC	AM PM	28.2 70.6	D F
26. Witherby St/ Pacific Hwy	AWSC	AM PM	21.3 124.7	C F
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.2 26.4	B D
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F
29. Washington St/ San Diego Ave	Signal	AM PM	28.8 16.8	C B
30. Washington St/ Hancock St	Signal	AM PM	25.3 61.2	C E
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.9 128.8	C F
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.2	B C
(Continued on Next Page)				

TABLE 10–1
YEAR 2050 NO-ACTION ALTERNATIVE INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
33. Pacific Hwy/ Sassafras St	Signal	AM PM	240.0 130.5	F F
34. Pacific Hwy / Laurel St	Signal	AM PM	154.2 172.9	F F
35. Harbor Dr / Laurel St	Signal	AM PM	125.1 115.1	F F
36. Pacific Hwy / Sea World Dr	Signal	AM PM	32.4 88.7	C F
37. Sea World Dr / I-5 SB Ramps	Signal	AM PM	35.9 21.0	D C
38. Sea World Dr / I-5 NB Ramps	Signal	AM PM	44.6 81.9	D F
39. Morena Blvd / Linda Vista Rd	Signal	AM PM	17.1 24.3	B C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. All-Way Stop Control. Average delay reported.
d. Two-Way Stop Control. Worst critical movement delay reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 10–2
YEAR 2050 NO-ACTION ALTERNATIVE SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
Rosecrans Street					
1. Dewey Rd to Lytton St	5-Lane Collector (TWLTL)	37,500	56,770	F	1.514
2. Lytton St to Midway Dr	6-Lane Major	50,000	52,460	F	1.049
3. Midway Dr to Sports Arena Blvd	6-Lane Major	50,000	62,240	F	1.245
4. Sports Arena Blvd to Kurtz St	4-Lane Collector (TWLTL)	30,000	33,010	F	1.100
5. E: Kurtz St to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	28,240	E	0.941
Taylor Street					
6. Pacific Hwy to Congress St	5-Lane Major (Raised Median)	45,000	18,960	B	0.421
7. Congress St to Juan St	5-Lane Major (Raised Median)	45,000	17,600	B	0.391
8. Juan St to Presidio Dr	4-Lane Major (Raised Median)	40,000	20,230	B	0.506
9. Presidio Dr to I-8 East Ramp	2-Lane Collector	10,000	14,800	F	1.480
Hotel Circle S.					
10. I-8 East Ramp to Bachman Pl	2-Lane Collector (TWLTL)	15,000	12,910	D	0.861
Pacific Highway					
11. SeaWorld Dr to Taylor St	2-Lane Collector (TWLTL)	15,000	21,610	F	1.441
12. Taylor St to Kurtz St	6-Lane Major (Raised Median)	50,000	20,360	B	0.407
13. Kurtz St to Sports Arena Blvd	6-Lane Major (Raised Median)	50,000	45,060	E	0.901
14. Sports Arena Blvd to Barnett Ave	5-Lane Prime Arterial	50,000	50,390	F	1.008
15. Barnett Ave to Witherby St	Expressway	80,000	93,240	F	1.166
16. Witherby St to W. Washington St	Expressway	80,000	98,530	F	1.232
17. W. Washigton St to Sassafras St	6-Lane Prime Arterial	60,000	61,200	F	1.020
18. Sassafras St to W. Laurel St	6-Lane Major (Raised Median)	50,000	23,390	B	0.468
Morena Boulevard					
19. Friars Rd to I-8	4-Lane Major (Raised Median)	40,000	43,760	F	1.094
Linda Vista Road					
20. Morena Blvd to Colusa St	4-Lane Collector (TWLTL)	30,000	29,330	E	0.978
Kurtz Street					
21. Rosecrans St to Pacific Hwy	2-Lane Collector (WP)	8,000	21,750	F	2.719
Sports Arena Blvd					
22. Midway Dr to Kemper St	5-Lane Collector (TWLTL)	37,500	28,750	D	0.767
23. Kemper St to East Dr	5-Lane Major (Raised Median)	45,000	29,370	C	0.653
24. East Dr to Rosecrans St	5-Lane Major (Raised Median)	45,000	28,330	C	0.630
25. Rosecrans St to Enterprise St	2-Lane Collector (WP)	8,000	6,330	D	0.791
Midway Drive					
26. East Dr to Rosecrans St	4-Lane Collector (TWLTL)	30,000	40,650	F	1.355
27. Rosecrans St to Bogley Dr	4-Lane Collector (TWLTL)	30,000	27,310	E	0.910
28. Bogley Dr to Barnett Ave	4-Lane Collector (TWLTL)	30,000	27,140	E	0.905
Lytton Street					
29. Rosecrans St to St. Charles St	4-Lane Collector (TWLTL)	30,000	29,980	E	0.999

(Continued on Next Page)

TABLE 10–2
YEAR 2050 NO-ACTION ALTERNATIVE SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
(Continued from Previous Page)					
Barnett Avenue					
30. St. Charles St to Henderson Ave	4-Lane Collector (Raised Median)	30,000	32,210	F	1.074
31. Henderson Ave to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	34,870	F	1.162
Hancock Street					
32. Old Town Ave to Witherby St	2-Lane Collector (WP)	8,000	14,050	F	1.756
33. Witherby St to Noell St	2-Lane Collector (WP)	8,000	6,430	D	0.804
34. Noell St to W. Washington St	2-Lane Collector (WP)	8,000	22,770	F	2.846
W. Washington Street					
35. Admiral Boland Way to Pacific Hwy	2-Lane Collector	8,000	24,690	F	3.086
36. Pacific Hwy to Hancock St	4-Lane Major (Raised Median)	40,000	29,210	C	0.730
37. Hancock St to W. University Ave	4-Lane Major (Raised Median)	40,000	34,950	D	0.874

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.

TABLE 10–3
YEAR 2050 NO-ACTION ALTERNATIVE
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5														
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,840	6,800	1,254	1,247	2,160	0.581	0.577	20.40	20.30	C	C
	SB	5 Main + 1 Aux		8,310	9,610	1,524	1,762	2,160	0.706	0.816	25.10	30.40	C	D
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	7,870	8,390	1,742	1,858	2,133	0.817	0.871	30.20	33.60	D	D
	SB	5 Main		8,950	8,940	1,982	1,979	2,245	0.883	0.882	35.10	35.10	E	E
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	8,030	1,669	1,778	2,130	0.784	0.835	28.40	31.30	D	D
	SB	4 Main + 1 Aux		8,570	8,560	1,897	1,895	2,133	0.889	0.888	34.90	34.80	D	D
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	6,330	1,644	1,752	2,237	0.735	0.783	27.20	29.40	D	D
	SB	4 Main		6,750	6,750	1,868	1,868	2,245	0.832	0.832	32.00	32.00	D	D
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	6,590	1,710	1,824	2,237	0.764	0.815	28.50	31.10	D	D
	SB	4 Main		7,030	7,020	1,946	1,943	2,241	0.868	0.867	34.30	34.10	D	D

(Continued on Next Page)

TABLE 10–3
YEAR 2050 NO-ACTION ALTERNATIVE
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
(Continued from Previous Page)														
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,330	8,880	1,844	1,966	2,126	0.867	0.925	33.4	37.7	D	E
	SB	4 Main + 1 Aux		9,480	9,470	2,099	2,097	2,130	0.985	0.985	43.4	43.3	E	E
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,230	9,840	2,044	2,179	2,119	0.965	1.028	41.3	—	E	F
	SB	4 Main + 1 Aux		10,500	10,490	2,325	2,322	2,112	1.101	1.099	—	—	F	F
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	7,650	8,160	2,117	2,258	2,216	0.955	1.019	40.8	—	E	F
	SB	4 Main		8,700	8,700	2,408	2,408	2,220	1.085	1.085	—	—	F	F
9. 1st Ave to 6th Ave	NB	5 Main	309,610	10,490	11,180	2,322	2,475	2,216	1.048	1.117	—	—	F	F
	SB	5 Main		11,930	11,920	2,641	2,639	2,213	1.193	1.192	—	—	F	F
10. 6th Ave to SR-163	NB	5 Main	252,960	8,570	9,130	1,897	2,021	2,216	0.856	0.912	33.8	37.4	D	E
	SB	5 Main		9,750	9,740	2,159	2,156	2,216	0.974	0.973	42.5	42.4	E	E
Interstate 8														
11. W. Mission Bay Dr /Midway Dr to I-5	EB	4 Main	116,880	3,840	3,010	1,050	823	2,248	0.467	0.366	16.9	13.2	B	B
	WB	4 Main		4,880	4,700	1,334	1,285	2,259	0.591	0.569	21.0	20.3	C	C
(Continued on Next Page)														

Table 10–3
Year 2050 No-Action Alternative
Freeway Mainline Operations

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
(Continued from Previous Page)														
12. I-5 to Morena Blvd	EB	4 Main	139,450	4,080	5,590	1,115	1,528	2,241	0.498	0.682	18.1	24.9	C	C
	WB	3 Main		5,750	4,390	2,096	1,600	2,248	0.932	0.712	38.8	26.0	E	C
13. Morena Blvd to Hotel Circle /Taylor St	EB	4 Main + 1 Aux	232,620	6,800	9,330	1,487	2,040	2,126	0.699	0.960	24.6	40.8	C	E
	WB	5 Main		9,600	7,330	2,099	1,603	1,948	1.078	0.823	—	29.1	F	D
14. Taylor St to Hotel Circle	EB	4 Main	218,490	6,390	8,760	1,747	2,394	2,229	0.784	1.074	29.6	—	D	F
	WB	5 Main		9,020	6,880	1,972	1,504	2,237	0.882	0.672	35.2	24.6	E	C
15. Hotel Circle to SR-163	EB	4 Main	233,750	6,830	9,370	1,865	2,558	2,229	0.837	1.148	32.4	—	D	F
	WB	5 Main		9,650	7,360	2,108	1,608	2,229	0.946	0.721	39.9	26.8	E	D

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. LOS = Level of Service

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. Main = Mainline
2. Aux = Auxiliary
3. Truck factor sourced to most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2016).
4. "—" density exceeds the maximum threshold for LOS F.

TABLE 10–4
YEAR 2050 NO-ACTION ALTERNATIVE
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative						2 SOV	
	AM	465	335	130	23	3,250	130
	PM	505	318	187	35	4,675	187

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane

11.0 YEAR 2050 ALTERNATIVE 1: NAVY RECAPITALIZATION AT OTC ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 conditions with the addition of Alternative 1: Navy Recapitalization at OTC traffic. For the purposes of this study, impacts identified under Year 2050 conditions are considered "cumulative" transportation impacts.

11.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 with Alternative 1: Navy Recapitalization at OTC conditions. ***Table 11–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #6. Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours
- Intersection #8. Camino Del Rio W. / Hancock Street – LOS F during the p.m. peak hour
- Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E during the p.m. peak hour
- Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour
- Intersection #13. Rosecrans Street / Lytton Street – LOS E during the a.m. and p.m. peak hours
- Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours
- **Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the p.m. peak hour**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours
- **Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #25. Witherby Street / Hancock Street – LOS F during the p.m. peak hour**
- **Intersection #26. Witherby Street / Pacific Highway – LOS F during the p.m. peak hour**
- Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hours

- Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour
- Intersection #31. W. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour
- Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours
- Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #36. Pacific Highway / Sea World Drive – LOS F during the p.m. peak hour
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Based on the established significance criteria, **eight significant cumulative impacts** were calculated with the addition of Alternative 1 traffic at the intersections **bolded and underlined** above since the Proposed Action alternative-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 second for LOS F operating intersections.

Appendix J contains the intersection analysis worksheets for the Year 2050 with Alternative 1: Navy Recapitalization at OTC scenario.

11.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 with Alternative 1: Navy Recapitalization at OTC conditions. ***Table 11–2*** reports the Year 2050 with Alternative 1: Navy Recapitalization at OTC daily street segment operations. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor St (LOS F)
- Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS E)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)
- Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)

- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa St (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS E)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- **Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)

Based on the established significance criteria, **one significant cumulative impact** was calculated with the addition of Alternative 1 traffic on study area street segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.01 for the LOS F operating street segment.

11.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 with Alternative 1: Navy Recapitalization at OTC conditions. ***Tables 11–3*** and ***11–4*** report the Year 2050 with Alternative 1: Navy Recapitalization at OTC freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #10. I-5: 6th Avenue to SR-163, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)

- Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)
- Freeway Segment #15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)

Based on the established significance criteria, **no significant cumulative impacts** were calculated with the addition of Alternative 1 traffic on study area freeway segments since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix K contains the detailed HCS calculations sheets for the Year 2050 with Alternative 1: Navy Recapitalization at OTC scenario.

11.4 Peak Hour Ramp Meter Operations

Freeway ramp meters were analyzed under Year 2050 with Alternative 1: Navy Recapitalization at OTC conditions. ***Table 11–5*** reports the Year 2050 with Alternative 1: Navy Recapitalization at OTC ramp meter operations. The following ramp meter operations are calculated with the addition of the Proposed Action alternative:

- Ramp Meter #1. Moore Street/ I-5 NB On-Ramp – Delays of 23/37 minutes and queues of 131/195 vehicles during the a.m. / p.m. peak hours are calculated.at the *Moore Street / NB I-5 On-Ramp* under Year 2050 with Alternative 1: Navy Recapitalization at OTC conditions.

Based on the established significance criteria, **no significant cumulative impacts** were calculated with the addition of Alternative 1 traffic since the increase in delay due to the Proposed Action alternative traffic does not exceed the allowable 2.0-minute threshold.

TABLE 11–1
YEAR 2050 WITH ALTERNATIVE 1 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 1		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM	11.4	B	11.5	B	0.1	No
		PM	29.4	D	29.4	D	0.0	
2. Taylor St/ I-8 EB Ramps	Signal	AM	15.6	B	15.6	B	0.0	No
		PM	27.5	C	27.7	C	0.2	
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM	21.3	C	21.4	C	0.1	No
		PM	14.5	B	14.5	B	0.0	
4. Taylor St/ Juan St	Signal	AM	15.0	B	15.1	B	0.1	No
		PM	34.1	C	32.1	C	-2.0	
5. Congress St/ Taylor St	Signal	AM	12.9	B	12.9	B	0.0	No
		PM	33.1	C	33.3	C	0.2	
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM	95.9	F	96.7	F	0.8	**Yes**
		PM	97.0	F	**98.4**	**F**	**1.4**	
7. Rosecrans St/ Jefferson St	TWSC [e]	AM	43.5	E	43.5	E	0.0	No
		PM	816.6	F	816.6	F	0.0	
8. Camino Del Rio W/ Hancock St	Signal	AM	52.3	D	52.6	D	0.3	No
		PM	139.2	F	139.1	F	-0.1	
9. Camino Del Rio W/ Kurtz St	Signal	AM	15.7	B	15.7	B	0.0	No
		PM	47.8	D	47.8	D	0.0	
10. Rosecrans St/ Kurtz St	Signal	AM	14.6	B	14.6	B	0.0	No
		PM	47.0	D	47.0	D	0.0	
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM	25.7	C	25.9	C	0.2	No
		PM	72.4	E	72.9	E	0.5	
12. Rosecrans St/ Midway Dr	Signal	AM	37.2	D	37.3	D	0.1	No
		PM	57.3	E	57.7	E	0.4	
13. Rosecrans St/ Lytton St	Signal	AM	62.9	E	63.1	E	0.2	No
		PM	60.4	E	60.5	E	0.1	
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM	60.6	E	60.9	E	0.3	No
		PM	107.4	F	107.3	F	-0.1	
15. Midway Dr/ Enterprise St	Signal	AM	21.6	C	22.2	C	0.6	No
		PM	22.7	C	22.8	C	0.1	
16. Barnett Ave/ Midway Dr	Signal	AM	9.7	A	9.7	A	0.0	No
		PM	14.1	B	14.4	B	0.3	

(Continued on Next Page)

TABLE 11–1
YEAR 2050 WITH ALTERNATIVE 1 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 1		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.6 12.8	B B	12.6 12.8	B B	0.0 0.0	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	150.0 303.1	F F	**159.0** **305.9**	**F** **F**	**9.0** **2.8**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	16.6 433.8	C F	16.7 **455.2**	C **F**	0.1 **21.4**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	141.5 232.9	F F	**145.5** **238.7**	**F** **F**	**4.0** **5.8**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E	142.4 65.9	F E	0.3 0.2	No
23. Old Town Ave/ Moore St	Signal	AM PM	620.4 183.9	F F	**632.4** **186.9**	**F** **F**	**12.0** **3.0**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	106.6 97.5	F F	**113.2** **102.1**	**F** **F**	**6.6** **4.6**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	28.2 70.6	D F	30.7 **76.8**	D **F**	2.5 **6.2**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	21.3 124.7	C F	22.9 **133.8**	C **F**	1.6 **9.1**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.2 26.4	B D	10.3 27.9	B D	0.1 1.5	No
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F	39.1 122.1	E F	0.2 0.4	No
29. Washington St/ San Diego Ave	Signal	AM PM	28.8 16.8	C B	28.8 16.8	C B	0.0 0.0	No
30. Washington St/ Hancock St	Signal	AM PM	25.3 61.2	C E	25.3 61.7	C E	0.0 0.5	No
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.9 128.8	C F	27.9 128.9	C F	0.0 0.1	No
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.2	B C	15.2 29.3	B C	0.0 0.1	No
(Continued on Next Page)								

TABLE 11–1
YEAR 2050 WITH ALTERNATIVE 1 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 1		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM PM	240.0 130.5	F F	240.0 130.7	F F	0.0 0.2	No
34. Pacific Hwy / Laurel St	Signal	AM PM	154.2 172.9	F F	154.3 173.0	F F	0.1 0.1	No
35. Harbor Dr / Laurel St	Signal	AM PM	125.1 115.1	F F	125.2 115.2	F F	0.1 0.1	No
36. Pacific Hwy / Sea World Dr	Signal	AM PM	32.4 88.7	C F	32.7 89.2	C F	0.3 0.5	No
37. Sea World Dr / I-5 SB Ramps	Signal	AM PM	35.9 21.0	D C	36.0 21.1	D C	0.1 0.1	No
38. Sea World Dr / I-5 NB Ramps	Signal	AM PM	44.6 81.9	D F	51.8 82.0	D F	7.2 0.1	No
39. Morena Blvd / Linda Vista Rd	Signal	AM PM	17.1 24.3	B C	17.2 24.4	B C	0.1 0.1	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to the Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11–2
YEAR 2050 WITH ALTERNATIVE 1 SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 1			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	56,770	F	1.514	56,810	F	1.515	0.001	40	No
2. Lytton St to Midway Dr	50,000	52,460	F	1.049	52,500	F	1.050	0.001	40	No
3. Midway Dr to Sports Arena Blvd	50,000	62,240	F	1.245	62,350	F	1.247	0.002	110	No
4. Sports Arena Blvd to Kurtz St	30,000	33,010	F	1.100	33,090	F	1.103	0.003	80	No
5. E: Kurtz St to Pacific Hwy	30,000	28,240	E	0.941	28,260	E	0.942	0.001	20	No
Taylor Street										
6. Pacific Hwy to Congress St	45,000	18,960	B	0.421	19,040	B	0.423	0.002	80	No
7. Congress St to Juan St	45,000	17,600	B	0.391	17,680	B	0.393	0.002	80	No
8. Juan St to Presidio Dr	40,000	20,230	B	0.506	20,300	B	0.508	0.002	70	No
9. Presidio Dr to I-8 East Ramp	10,000	14,800	F	1.480	14,850	F	1.485	0.005	50	No
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	12,910	D	0.861	12,910	D	0.861	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	21,610	F	1.441	21,690	F	1.446	0.005	80	No
12. Taylor St to Kurtz St	50,000	20,360	B	0.407	20,500	B	0.410	0.003	140	No
13. Kurtz St to Sports Arena Blvd	50,000	45,060	E	0.901	45,560	E	0.911	0.010	500	No
14. Sports Arena Blvd to Barnett Ave	50,000	50,390	F	1.008	50,690	F	1.014	0.006	300	No
15. Barnett Ave to Witherby St	80,000	93,240	F	1.166	93,700	F	1.171	0.005	460	No
16. Witherby St to W. Washington St	80,000	98,530	F	1.232	98,810	F	1.235	0.003	280	No
17. W. Washigton St to Sassafras St	60,000	61,200	F	1.020	61,440	F	1.024	0.004	240	No
18. Sassafras St to W. Laurel St	50,000	23,390	B	0.468	23,420	B	0.468	0.000	30	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	43,760	F	1.094	43,780	F	1.095	0.001	20	No
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	29,330	E	0.978	29,350	E	0.978	0.001	20	No
Kurtz Street										
21. Rosecrans St to Pacific Hwy	8,000	21,750	F	2.719	21,810	F	2.726	0.007	60	No
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	28,750	D	0.767	28,770	D	0.767	0.001	20	No
23. Kemper St to East Dr	45,000	29,370	C	0.653	29,400	C	0.653	0.000	30	No
24. East Dr to Rosecrans St	45,000	28,330	C	0.630	28,370	C	0.630	0.000	40	No
25. Rosecrans St to Enterprise St	8,000	6,330	D	0.791	6,350	D	0.794	0.003	20	No
Midway Drive										
26. East Dr to Rosecrans St	30,000	40,650	F	1.355	40,670	F	1.356	0.001	20	No
27. Rosecrans St to Bogley Dr	30,000	27,310	E	0.910	27,380	E	0.913	0.003	70	No
28. Bogley Dr to Barnett Ave	30,000	27,140	E	0.905	27,350	E	0.912	0.007	210	No
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	29,980	E	0.999	30,010	F	1.000	0.001	30	No

(Continued on Next Page)

TABLE 11–2
YEAR 2050 WITH ALTERNATIVE 1 SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 1			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	32,210	F	1.074	32,240	F	1.075	0.001	30	No
31. Henderson Ave to Pacific Hwy	30,000	34,870	F	1.162	35,090	F	1.170	0.008	220	No
Hancock Street										
32. Old Town Ave to Witherby St	8,000	14,050	F	1.756	**14,230**	**F**	**1.779**	**0.023**	**180**	**Yes**
33. Witherby St to Noell St	8,000	6,430	D	0.804	6,440	D	0.805	0.001	10	No
34. Noell St to W. Washington St	8,000	22,770	F	2.846	22,770	F	2.846	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	24,690	F	3.086	24,690	F	3.086	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	29,210	C	0.730	29,250	C	0.731	0.001	40	No
37. Hancock St to W. University Ave	40,000	34,950	D	0.874	34,990	D	0.875	0.001	40	No

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 11–3
YEAR 2050 WITH ALTERNATIVE 1
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 1: Navy Recapitalization at OTC							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,840	1,254	2,160	0.581	20.4	C	216,550	6,841	1,254	2,160	0.581	20.4	C	0.000	No
	SB	5 Main + 1 Aux		8,310	1,524	2,160	0.706	25.1	C		8,318	1,525	2,160	0.706	25.1	C	0.000	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	7,870	1,742	2,133	0.817	30.2	D	232,450	7,871	1,743	2,133	0.817	30.2	D	0.000	No
	SB	5 Main		8,950	1,982	2,245	0.883	35.1	E		8,964	1,985	2,245	0.884	35.3	E	0.001	No
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	1,669	2,130	0.784	28.4	D	222,480	7,540	1,669	2,130	0.784	28.4	D	0.000	No
	SB	4 Main + 1 Aux		8,570	1,897	2,133	0.889	34.9	D		8,570	1,897	2,133	0.889	34.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	1,644	2,237	0.735	27.2	D	175,330	5,940	1,644	2,237	0.735	27.5	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	1,710	2,237	0.764	28.5	D	182,450	6,180	1,710	2,237	0.764	28.5	D	0.000	No
	SB	4 Main		7,030	1,946	2,241	0.868	34.3	D		7,030	1,946	2,241	0.868	34.3	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,330	1,844	2,126	0.867	33.4	D	246,180	8,346	1,848	2,126	0.869	33.5	D	0.002	No
	SB	4 Main + 1 Aux		9,480	2,099	2,130	0.985	43.4	E		9,482	2,099	2,130	0.985	43.3	E	0.000	No
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,230	2,044	2,119	0.965	41.3	E	272,810	9,246	2,047	2,119	0.966	41.4	E	0.001	No
	SB	4 Main + 1 Aux		10,500	2,325	2,112	1.101	—	F		10,502	2,325	2,112	1.101	—	F	0.000	No
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	7,650	2,117	2,216	0.955	40.8	E	226,110	7,666	2,122	2,216	0.958	41.0	E	0.003	No
	SB	4 Main		8,700	2,408	2,220	1.085	—	F		8,702	2,408	2,220	1.085	—	F	0.000	No
9. 1st Ave to 6th Ave	NB	5 Main	309,610	10,490	2,322	2,216	1.048	—	F	309,790	10,505	2,326	2,216	1.050	—	F	0.002	No
	SB	5 Main		11,930	2,641	2,213	1.193	—	F		11,932	2,642	2,213	1.194	—	F	0.001	No
10. 6th Ave to SR-163	NB	5 Main	252,960	8,570	1,897	2,216	0.856	33.8	D	253,130	8,584	1,901	2,216	0.858	33.9	D	0.002	No
	SB	5 Main		9,750	2,159	2,216	0.974	42.5	E		9,751	2,159	2,216	0.974	42.5	E	0.000	No
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,840	1,050	2,248	0.467	16.9	B	116,900	3,842	1,050	2,248	0.467	16.9	B	0.000	No
	WB	4 Main		4,880	1,334	2,259	0.591	21.0	C		4,880	1,334	2,259	0.591	21.0	C	0.000	No
12. I-5 to Morena Blvd	EB	4 Main	139,450	4,080	1,115	2,241	0.498	18.1	C	139,550	4,081	1,116	2,241	0.498	18.1	C	0.000	No
	WB	3 Main		5,750	2,096	2,248	0.932	38.8	E		5,758	2,099	2,248	0.934	38.9	E	0.002	No

(Continued on Next Page)

TABLE 11–3
YEAR 2050 WITH ALTERNATIVE 1
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 1: Navy Recapitalization at OTC							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	232,620	6,800	1,487	2,126	0.699	24.6	C	232,720	6,801	1,487	2,126	0.699	24.6	C	0.000	No
	WB	5 Main		9,600	2,099	1,948	1.078	—	F		9,608	2,101	1,948	1.079	—	F	0.001	No
14. Taylor St to Hotel Circle	EB	4 Main	218,490	6,390	1,747	2,229	0.784	29.6	D	218,630	6,391	1,747	2,229	0.784	29.6	D	0.000	No
	WB	5 Main		9,020	1,972	2,237	0.882	35.2	E		9,032	1,975	2,237	0.883	35.2	E	0.001	No
15. Hotel Circle to SR-163	EB	4 Main	233,750	6,830	1,865	2,229	0.837	32.4	D	233,890	6,831	1,865	2,229	0.837	32.4	D	0.000	No
	WB	5 Main		9,650	2,108	2,229	0.946	39.9	E		9,662	2,111	2,229	0.947	40.1	E	0.001	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. Main = Mainline
2. Aux = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

Table 11–4
Year 2050 with Alternative 1
Freeway Segment Operations – PM Peak Hour

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 1: Navy Recapitalization at OTC							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,800	1,247	2,160	0.577	20.3	C	216,550	6,809	1,248	2,160	0.578	20.3	C	0.001	No
	SB	5 Main + 1 Aux		9,610	1,762	2,160	0.816	30.4	D		9,611	1,762	2,160	0.816	30.4	D	0.000	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	8,390	1,858	2,133	0.871	33.6	D	232,450	8,405	1,861	2,133	0.872	33.7	D	0.001	No
	SB	5 Main		8,940	1,979	2,245	0.882	35.1	E		8,942	1,980	2,245	0.882	35.1	E	0.000	No
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	8,030	1,778	2,130	0.835	31.3	D	222,480	8,030	1,778	2,130	0.835	31.3	D	0.000	No
	SB	4 Main + 1 Aux		8,560	1,895	2,133	0.888	34.8	D		8,560	1,895	2,133	0.888	34.8	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	6,330	1,752	2,237	0.783	29.4	D	175,330	6,330	1,752	2,237	0.783	29.4	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,590	1,824	2,237	0.815	31.1	D	182,450	6,590	1,824	2,237	0.815	31.1	D	0.000	No
	SB	4 Main		7,020	1,943	2,241	0.867	34.1	D		7,020	1,943	2,241	0.867	34.1	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,880	1,966	2,126	0.925	37.7	E	246,180	8,882	1,966	2,126	0.925	37.7	E	0.000	No
	SB	4 Main + 1 Aux		9,470	2,097	2,130	0.985	43.3	E		9,488	2,101	2,130	0.986	43.5	E	0.001	No
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,840	2,179	2,119	1.028	—	F	272,810	9,842	2,179	2,119	1.028	—	F	0.000	No
	SB	4 Main + 1 Aux		10,490	2,322	2,112	1.099	—	F		10,508	2,326	2,112	1.101	—	F	0.002	No
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	8,160	2,258	2,216	1.019	—	F	226,110	8,162	2,259	2,216	1.019	—	F	0.000	No
	SB	4 Main		8,700	2,408	2,220	1.085	—	F		8,718	2,413	2,220	1.087	—	F	0.002	No
9. 1st Ave to 6th Ave	NB	5 Main	309,610	11,180	2,475	2,216	1.117	—	F	309,790	11,182	2,476	2,216	1.117	—	F	0.000	No
	SB	5 Main		11,920	2,639	2,213	1.192	—	F		11,937	2,643	2,213	1.194	—	F	0.002	No
10. 6th Ave to SR-163	NB	5 Main	252,960	9,130	2,021	2,216	0.912	37.4	E	253,130	9,132	2,022	2,216	0.912	37.4	E	0.000	No
	SB	5 Main		9,740	2,156	2,216	0.973	42.4	E		9,755	2,160	2,216	0.975	42.5	E	0.002	No
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,010	823	2,248	0.366	13.2	B	116,900	3,010	823	2,248	0.366	13.2	B	0.000	No
	WB	4 Main		4,700	1,285	2,259	0.569	20.3	C		4,702	1,285	2,259	0.569	20.3	C	0.000	No
12. I-5 to Morena Blvd	EB	4 Main	139,450	5,590	1,528	2,241	0.682	24.9	C	139,550	5,599	1,530	2,241	0.683	24.9	C	0.001	No
	WB	3 Main		4,390	1,600	2,248	0.712	26.0	C		4,391	1,600	2,248	0.712	26.0	C	0.000	No

(Continued on Next Page)

TABLE 11–4
YEAR 2050 WITH ALTERNATIVE 1
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 1: Navy Recapitalization at OTC							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB WB	4 Main + 1 Aux 5 Main	232,620	9,330 7,330	2,040 1,603	2,126 1,948	0.960 0.823	40.8 29.1	E D	232,720	9,339 7,331	2,042 1,603	2,126 1,948	0.960 0.823	40.8 29.1	E D	0.000 0.000	No No
14. Taylor St to Hotel Circle	EB WB	4 Main 5 Main	218,490	8,760 6,880	2,394 1,504	2,229 2,237	1.074 0.672	— 24.6	F C	218,630	8,773 6,881	2,398 1,505	2,229 2,237	1.076 0.673	— 24.6	F C	0.002 0.001	No No
15. Hotel Circle to SR-163	EB WB	4 Main 5 Main	233,750	9,370 7,360	2,558 1,608	2,229 2,229	1.148 0.721	— 26.8	F D	233,890	9,383 7,361	2,562 1,608	2,229 2,229	1.149 0.721	— 26.8	F D	0.001 0.000	No No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 11–5
YEAR 2050 WITH ALTERNATIVE 1
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative							2 SOV
	AM	465	335	130	23	3,250	130
	PM	505	318	187	35	4,675	187
Year 2050 With Alternative 1							2 SOV
	AM	466	335	131	23	3,275	131
	PM	513	318	195	37	4,863	195
Δ	AM			1	0	25	1
	PM			8	2	188	8

Footnotes:

a. Peak Hour Flow “D” is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Discharge Rate “R” is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).
c. Excess Demand “E” is the difference between the Peak Hour Flow and the Discharge Rate.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.

11.5 Significant Impacts and Mitigation Measures

Alternative 1: Navy Recapitalization at OTC results in the fewest impacts to study area locations. Alternative 1: Navy Recapitalization at OTC would have significant cumulative impacts at **eight (8)** intersections and **one (1)** street segment. No freeway segments or ramp meter impacts were calculated.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints, it is recommended that the Proposed Action alternative contribute to implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 11–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 11–1 shows an illustration of the significantly impacted locations.

TABLE 11–5
YEAR 2050 WITH ALTERNATIVE 1 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Alt 1-I-1	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 1-I-2	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 1-I-3	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 1-I-4	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 11–5
YEAR 2050 WITH ALTERNATIVE 1 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 1-I-5	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 1-I-6	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located less than 100 feet from the I-5 southbound on-ramp, which would be less than ideal for installing a signal without reconfiguring the both the intersection and the on-ramp. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 1-I-7	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 1-I-8	26	Witherby St/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 11–5
YEAR 2050 WITH ALTERNATIVE 1 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
STREET SEGMENTS					
		Hancock Street			
Alt 1-S-1	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?

IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
6	Alt 1-I-1	23	Alt 1-I-5
18	Alt 1-I-2	24	Alt 1-I-6
19	Alt 1-I-3	25	Alt 1-I-7
20	Alt 1-I-4	26	Alt 1-I-8

Figure 11–1 Year 2050 with Alternative 1: Navy Recapitalization at OTC Impact Summary

Study Intersection
Project Site
Parks
Wetlands
Impact Mitigated
Impact Unmitigated
Alt X-S-X Street Segment Impact ID
Alt X-S-X Freeway Segment Impact ID

0 0.35 0.7 Miles

12.0 YEAR 2050 WITH ALTERNATIVE 2: HIGHER-DENSITY MIXED-USE REVITALIZATION ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 conditions with the addition of Alternative 2: Higher-density Mixed-Use Revitalization traffic. No changes to the street network over existing conditions were assumed in the analysis. For the purposes of this study, impacts identified under Year 2050 conditions are considered "cumulative" transportation impacts.

12.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization conditions. ***Table 12–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #2. Taylor Street / I-8 EB Ramps – LOS E during the p.m. peak hour**
- **Intersection #6. Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #8. Camino Del Rio W. / Hancock Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour**
- **Intersection #13. Rosecrans Street / Lytton Street – LOS F/E during the a.m./p.m. peak hours**
- **Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #15. Midway Drive / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #16. Midway Drive / Barnett Avenue – LOS F during the p.m. peak hour**
- **Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the a.m. and p.m. peak hours**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours**

- **Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #25. Witherby Street / Hancock Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #26. Witherby Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #27. Witherby Street / Tripoli Avenue – LOS F during the a.m. and p.m. peak hours**
- **Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour**
- Intersection #31. W. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour
- **Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #36. Pacific Highway / Sea World Drive – LOS F during the a.m. and p.m. peak hours**
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Based on the established significance criteria, **25 significant cumulative impacts** were calculated with the addition of Alternative 2 traffic at the intersections **bolded and underlined** above since the Proposed Action alternative-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 second for LOS F operating intersections.

Appendix L contains the intersection analysis worksheets for the Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization scenario.

12.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization conditions. ***Table 12–2*** reports the Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization daily street segment operations. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **<u>Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)</u>**
- **<u>Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)</u>**
- **<u>Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)</u>**
- **<u>Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)</u>**
- **<u>Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)</u>**
- **<u>Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)</u>**
- **<u>Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor Street (LOS F)</u>**
- **<u>Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS F)</u>**
- **<u>Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)</u>**
- **<u>Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)</u>**
- **<u>Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)</u>**
- **<u>Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)</u>**
- **<u>Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)</u>**
- **<u>Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS F)</u>**
- **<u>Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)</u>**
- **<u>Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)</u>**
- **<u>Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)</u>**
- **<u>Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)</u>**
- **<u>Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)</u>**
- **<u>Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)</u>**
- **<u>Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOSF)</u>**
- **<u>Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)</u>**
- **<u>Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)</u>**
- **<u>Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)</u>**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)

- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- **Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)**

Based on the established significance criteria, **25 significant cumulative impact** were calculated with the addition of Alternative 2 traffic on study area street segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

12.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization conditions. ***Tables 12–3*** and ***12–4*** report the Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)**
- **Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #10. I-5: 6th Avenue to SR-163, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS E/F – p.m. peak)**
- **Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)**
- **Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)**
- **Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**
- **Freeway Segment #15. I-8: Hotel Circle to SR-163, EB/WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**

Based on the established significance criteria, **ten significant cumulative impacts** were calculated with the addition of Alternative 2 traffic on study area freeway segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix M contains the detailed HCS calculations sheets for the Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization scenario.

12.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization. ***Table 12–5*** reports the Year 2050 Alternative 2: Higher-density Mixed-use Revitalization ramp meter operations.

- **<u>Ramp Meter #1. Moore Street/ I-5 NB On-ramp</u>** – Delays of 70/78 minutes and queues of 390/413 vehicles during the a.m. / p.m. peak hours are calculated.at the *Moore Street / NB I-5 On-Ramp* under Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization conditions.

Based on the established significance criteria, **<u>one (1) significant cumulative impact</u>** was calculated with the addition of Alternative 2 traffic at the location **<u>bolded and underlined</u>** above since the total delay at this on ramp is more than 15 minutes during the a.m. and p.m. peak hours and the increase in the delay at the ramp meter is greater than 2.0 minutes.

TABLE 12–1
YEAR 2050 WITH ALTERNATIVE 2
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 2		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM	11.4	B	13.3	B	1.9	No
		PM	29.4	D	29.9	D	0.5	
2. Taylor St/ I-8 EB Ramps	Signal	AM	15.6	B	21.8	C	6.2	**Yes**
		PM	27.5	C	**56.6**	**E**	**29.1**	
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM	21.3	C	33.6	C	12.3	No
		PM	14.5	B	17.5	B	3.0	
4. Taylor St/ Juan St	Signal	AM	15.0	B	16.1	B	1.1	No
		PM	34.1	C	47.0	D	12.9	
5. Congress St/ Taylor St	Signal	AM	12.9	B	13.6	B	0.7	No
		PM	33.1	C	39.2	D	6.1	
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM	95.9	F	**143.7**	**F**	**47.8**	**Yes**
		PM	97.0	F	**185.2**	**F**	**88.2**	
7. Rosecrans St/ Jefferson St	TWSC [e]	AM	43.5	E	**47.9**	**E**	**4.4**	**Yes**
		PM	816.6	F	**881.2**	**F**	**64.6**	
8. Camino Del Rio W/ Hancock St	Signal	AM	52.3	D	**57.3**	**E**	**5.0**	**Yes**
		PM	139.2	F	**146.5**	**F**	**7.3**	
9. Camino Del Rio W/ Kurtz St	Signal	AM	15.7	B	15.8	B	0.1	No
		PM	47.8	D	47.9	D	0.1	
10. Rosecrans St/ Kurtz St	Signal	AM	14.6	B	17.4	B	2.8	No
		PM	47.0	D	47.1	D	0.1	
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM	25.7	C	**61.1**	**E**	**35.4**	**Yes**
		PM	72.4	E	**115.5**	**F**	**43.1**	
12. Rosecrans St/ Midway Dr	Signal	AM	37.2	D	52.4	D	15.2	**Yes**
		PM	57.3	E	**74.0**	**E**	**16.7**	
13. Rosecrans St/ Lytton St	Signal	AM	62.9	E	**83.7**	**F**	**20.8**	**Yes**
		PM	60.4	E	**79.3**	**E**	**18.9**	
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM	60.6	E	**62.9**	**E**	**2.3**	**Yes**
		PM	107.4	F	**116.5**	**F**	**9.1**	
15. Midway Dr/ Enterprise St	Signal	AM	21.6	C	**74.7**	**F**	**53.1**	**Yes**
		PM	22.7	C	**165.8**	**F**	**143.1**	
16. Barnett Ave/ Midway Dr	Signal	AM	9.7	A	26.8	C	17.1	**Yes**
		PM	14.1	B	**81.4**	**F**	**57.3**	

(Continued on Next Page)

TABLE 12–1
YEAR 2050 WITH ALTERNATIVE 2
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 2		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.6 12.8	B B	13.9 15.3	B B	1.3 2.5	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	150.0 303.1	F F	**690.4** **1,141.9**	**F** **F**	**540.4** **838.8**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	16.6 433.8	C F	**146.1** **1,752.3**	**F** **F**	**129.5** **1,318.5**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	141.5 232.9	F F	**384.6** **462.7**	**F** **F**	**243.1** **229.8**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E	**157.9** **79.9**	**F** **E**	**15.8** **14.2**	**Yes**
23. Old Town Ave/ Moore St	Signal	AM PM	620.4 183.9	F F	**2,680.2** **381.1**	**F** **F**	**2,059.8** **197.2**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	106.6 97.5	F F	**380.7** **387.0**	**F** **F**	**274.1** **289.5**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	28.2 70.6	D F	**304.3** **417.0**	**F** **F**	**276.1** **346.4**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	21.3 124.7	C F	**204.9** **540.8**	**F** **F**	**183.6** **416.1**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.2 26.4	B D	**68.4** **272.5**	**F** **F**	**58.2** **246.1**	**Yes**
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F	**48.2** **138.4**	**E** **F**	**9.3** **16.7**	**Yes**
29. Washington St/ San Diego Ave	Signal	AM PM	28.8 16.8	C B	28.9 16.9	C B	0.1 0.1	No
30. Washington St/ Hancock St	Signal	AM PM	25.3 61.2	C E	25.4 **74.7**	C **E**	0.1 **13.5**	**Yes**
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.9 128.8	C F	28.0 128.9	C F	0.1 0.1	No
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.2	B C	15.1 32.6	B C	-0.1 3.4	No
(Continued on Next Page)								

TABLE 12–1
YEAR 2050 WITH ALTERNATIVE 2
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 2		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM	240.0	F	**244.9**	**F**	**4.9**	**Yes**
		PM	130.5	F	**142.3**	**F**	**11.8**	
34. Pacific Hwy / Laurel St	Signal	AM	154.2	F	**160.6**	**F**	**6.4**	**Yes**
		PM	172.9	F	**176.2**	**F**	**3.3**	
35. Harbor Dr / Laurel St	Signal	AM	125.1	F	**127.6**	**F**	**2.5**	**Yes**
		PM	115.1	F	**122.4**	**F**	**7.3**	
36. Pacific Hwy / Sea World Dr	Signal	AM	32.4	C	**98.9**	**F**	**66.5**	**Yes**
		PM	88.7	F	**141.3**	**F**	**52.6**	
37. Sea World Dr / I-5 SB Ramps	Signal	AM	35.9	D	36.0	D	0.1	No
		PM	21.0	C	21.1	C	0.1	
38. Sea World Dr / I-5 NB Ramps	Signal	AM	44.6	D	51.3	D	6.7	No
		PM	81.9	F	82.0	F	0.1	
39. Morena Blvd / Linda Vista Rd	Signal	AM	17.1	B	17.9	B	0.8	No
		PM	24.3	C	26.8	C	2.5	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS	UNSIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 12–2
YEAR 2050 WITH ALTERNATIVE 2
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 2			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	56,770	F	1.514	**59,370**	**F**	**1.583**	**0.069**	**2,600**	**Yes**
2. Lytton St to Midway Dr	50,000	52,460	F	1.049	**55,060**	**F**	**1.101**	**0.052**	**2,600**	**Yes**
3. Midway Dr to Sports Arena Blvd	50,000	62,240	F	1.245	**69,510**	**F**	**1.390**	**0.145**	**7,270**	**Yes**
4. Sports Arena Blvd to Kurtz St	30,000	33,010	F	1.100	**38,200**	**F**	**1.273**	**0.173**	**5,190**	**Yes**
5. E: Kurtz St to Pacific Hwy	30,000	28,240	E	0.941	**29,280**	**E**	**0.976**	**0.035**	**1,040**	**Yes**
Taylor Street										
6. Pacific Hwy to Congress St	45,000	18,960	B	0.421	24,150	B	0.537	0.116	5,190	No
7. Congress St to Juan St	45,000	17,600	B	0.391	22,790	B	0.506	0.115	5,190	No
8. Juan St to Presidio Dr	40,000	20,230	B	0.506	24,910	C	0.623	0.117	4,680	No
9. Presidio Dr to I-8 East Ramp	10,000	14,800	F	1.480	**17,920**	**F**	**1.792**	**0.312**	**3,120**	**Yes**
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	12,910	D	0.861	12,910	D	0.861	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	21,610	F	1.441	**26,800**	**F**	**1.787**	**0.346**	**5,190**	**Yes**
12. Taylor St to Kurtz St	50,000	20,360	B	0.407	29,710	C	0.594	0.187	9,350	No
13. Kurtz St to Sports Arena Blvd	50,000	45,060	E	0.901	**77,790**	**F**	**1.556**	**0.655**	**32,730**	**Yes**
14. Sports Arena Blvd to Barnett Ave	50,000	50,390	F	1.008	**70,130**	**F**	**1.403**	**0.395**	**19,740**	**Yes**
15. Barnett Ave to Witherby St	80,000	93,240	F	1.166	**123,370**	**F**	**1.542**	**0.376**	**30,130**	**Yes**
16. Witherby St to W. Washington St	80,000	98,530	F	1.232	**116,710**	**F**	**1.459**	**0.227**	**18,180**	**Yes**
17. W. Washigton St to Sassafras St	60,000	61,200	F	1.020	**76,780**	**F**	**1.280**	**0.260**	**15,580**	**Yes**
18. Sassafras St to W. Laurel St	50,000	23,390	B	0.468	25,470	B	0.509	0.041	2,080	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	43,760	F	1.094	**45,320**	**F**	**1.133**	**0.039**	**1,560**	**Yes**
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	29,330	E	0.978	**30,370**	**F**	**1.012**	**0.034**	**1,040**	**Yes**
Kurtz Street										
21. Rosecrans St to Pacific Hwy	8,000	21,750	F	2.719	**25,910**	**F**	**3.239**	**0.520**	**4,160**	**Yes**
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	28,750	D	0.767	30,310	D	0.808	0.041	1,560	No
23. Kemper St to East Dr	45,000	29,370	C	0.653	31,450	C	0.699	0.046	2,080	No
24. East Dr to Rosecrans St	45,000	28,330	C	0.630	30,930	C	0.687	0.057	2,600	No
25. Rosecrans St to Enterprise St	8,000	6,330	D	0.791	**7,890**	**E**	**0.986**	**0.195**	**1,560**	**Yes**
Midway Drive										
26. East Dr to Rosecrans St	30,000	40,650	F	1.355	**41,690**	**F**	**1.390**	**0.035**	**1,040**	**Yes**
27. Rosecrans St to Bogley Dr	30,000	27,310	E	0.910	**31,990**	**F**	**1.066**	**0.156**	**4,680**	**Yes**
28. Bogley Dr to Barnett Ave	30,000	27,140	E	0.905	**40,650**	**F**	**1.355**	**0.450**	**13,510**	**Yes**
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	29,980	E	0.999	**32,060**	**F**	**1.069**	**0.070**	**2,080**	**Yes**

(Continued on Next Page)

TABLE 12–2
YEAR 2050 WITH ALTERNATIVE 2
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 2			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	32,210	F	1.074	**34,290**	**F**	**1.143**	**0.069**	**2,080**	**Yes**
31. Henderson Ave to Pacific Hwy	30,000	34,870	F	1.162	**48,900**	**F**	**1.630**	**0.468**	**14,030**	**Yes**
Hancock Street										
32. Old Town Ave to Witherby St	8,000	14,050	F	1.756	**25,480**	**F**	**3.185**	**1.429**	**11,430**	**Yes**
33. Witherby St to Noell St	8,000	6,430	D	0.804	**6,950**	**E**	**0.869**	**0.065**	**520**	**Yes**
34. Noell St to W. Washington St	8,000	22,770	F	2.846	22,770	F	2.846	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	24,690	F	3.086	24,690	F	3.086	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	29,210	C	0.730	31,810	D	0.795	0.065	2,600	No
37. Hancock St to W. University Ave	40,000	34,950	D	0.874	**37,550**	**E**	**0.939**	**0.065**	**2,600**	**Yes**

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 12–3
YEAR 2050 WITH ALTERNATIVE 2
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative: ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	Year 2050 with Alternative 2: Higher-Density Mixed-used Revitalization: ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS	Δ (V/C) [f]	Sig?
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,840	1,254	2,160	0.581	20.4	C	222,680	7,137	1,309	2,160	0.606	21.3	C	0.025	No
	SB	5 Main + 1 Aux		8,310	1,524	2,160	0.706	25.1	C		8,500	1,558	2,160	0.721	25.7	C	0.015	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	7,870	1,742	2,133	0.817	30.2	D	243,190	8,389	1,857	2,133	0.871	33.5	D	0.054	No
	SB	5 Main		8,950	1,982	2,245	0.883	35.1	E		**9,282**	**2,055**	**2,245**	**0.915**	**37.5**	**E**	**0.032**	**Yes**
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	1,669	2,130	0.784	28.4	D	222,480	7,540	1,669	2,130	0.784	28.4	D	0.000	No
	SB	4 Main + 1 Aux		8,570	1,897	2,133	0.889	34.9	D		8,570	1,897	2,133	0.889	34.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	1,644	2,237	0.735	27.2	D	175,330	5,940	1,644	2,237	0.735	27.2	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	1,710	2,237	0.764	28.5	D	182,450	6,180	1,710	2,237	0.764	28.5	D	0.000	No
	SB	4 Main		7,030	1,946	2,241	0.868	34.3	D		7,030	1,946	2,241	0.868	34.3	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,330	1,844	2,126	0.867	33.4	D	258,970	**8,726**	**1,932**	**2,126**	**0.909**	**36.4**	**E**	**0.042**	**Yes**
	SB	4 Main + 1 Aux		9,480	2,099	2,130	0.985	43.4	E		**10,098**	**2,236**	**2,130**	**1.050**	—	**F**	**0.065**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,230	2,044	2,119	0.965	41.3	E	285,600	**9,626**	**2,131**	**2,119**	**1.006**	—	**F**	**0.041**	**Yes**
	SB	4 Main + 1 Aux		10,500	2,325	2,112	1.101	—	F		**11,118**	**2,462**	**2,112**	**1.166**	—	**F**	**0.065**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	7,650	2,117	2,216	0.955	40.8	E	238,900	**8,046**	**2,227**	**2,216**	**1.005**	—	**F**	**0.050**	**Yes**
	SB	4 Main		8,700	2,408	2,220	1.085	—	F		**9,318**	**2,579**	**2,220**	**1.162**	—	**F**	**0.077**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	309,610	10,490	2,322	2,216	1.048	—	F	321,560	**10,886**	**2,410**	**2,216**	**1.088**	—	**F**	**0.040**	**Yes**
	SB	5 Main		11,930	2,641	2,213	1.193	—	F		**12,548**	**2,778**	**2,213**	**1.255**	—	**F**	**0.062**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	252,960	8,570	1,897	2,216	0.856	33.8	D	263,870	**8,934**	**1,978**	**2,216**	**0.893**	**36.1**	**E**	**0.037**	**Yes**
	SB	5 Main		9,750	2,159	2,216	0.974	42.5	E		**10,319**	**2,285**	**2,216**	**1.031**	—	**F**	**0.057**	**Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,840	1,050	2,248	0.467	16.9	B	118,440	3,887	1,062	2,248	0.472	17.1	B	0.005	No
	WB	4 Main		4,880	1,334	2,259	0.591	21.0	C		4,954	1,354	2,259	0.599	21.4	C	0.008	No
12. I-5 to Morena Blvd	EB	4 Main	139,450	4,080	1,115	2,241	0.498	18.1	C	145,680	4,377	1,196	2,241	0.534	19.4	C	0.036	No
	WB	3 Main		5,750	2,096	2,248	0.932	38.8	E		**5,940**	**2,165**	**2,248**	**0.963**	**41.4**	**E**	**0.031**	**Yes**

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TABLE 12–3
YEAR 2050 WITH ALTERNATIVE 2
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 2: Higher-Density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	232,620	6,800	1,487	2,126	0.699	24.6	C	238,850	7,097	1,552	2,126	0.730	25.9	C	0.031	No
	WB	5 Main		9,600	2,099	1,948	1.078	—	F		**9,790**	**2,141**	**1,948**	**1.099**	**—**	**F**	**0.021**	**Yes**
14. Taylor St to Hotel Circle	EB	4 Main	218,490	6,390	1,747	2,229	0.784	29.6	D	227,840	6,835	1,868	2,229	0.838	32.5	D	0.054	No
	WB	5 Main		9,020	1,972	2,237	0.882	35.2	E		**9,305**	**2,035**	**2,237**	**0.910**	**37.1**	**E**	**0.028**	**Yes**
15. Hotel Circle to SR-163	EB	4 Main	233,750	6,830	1,865	2,229	0.837	32.4	D	243,100	**7,275**	**1,986**	**2,229**	**0.891**	**35.8**	**E**	**0.054**	**Yes**
	WB	5 Main		9,650	2,108	2,229	0.946	39.9	E		**9,935**	**2,170**	**2,229**	**0.974**	**42.4**	**E**	**0.028**	**Yes**

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. Bold typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 12–4
YEAR 2050 WITH ALTERNATIVE 2
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 2: Higher-Density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB SB	5 Main + 1 Aux 5 Main + 1 Aux	216,450	6,800 9,610	1,247 1,762	2,160 2,160	0.577 0.816	20.3 30.4	C D	222,680	7,058 9,959	1,294 1,826	2,160 2,160	0.599 0.845	21.0 32.1	C D	0.022 0.029	No No
2. I-8 to Old Town Ave	NB SB	4 Main + 1 Aux 5 Main	232,280	8,390 8,940	1,858 1,979	2,133 2,245	0.871 0.882	33.6 35.1	D E	243,190	**8,842** **9,551**	**1,958** **2,115**	**2,133** **2,245**	**0.918** **0.942**	**37.1** **39.6**	**E** **E**	**0.047** **0.061**	**Yes** **Yes**
3. Old Town Ave to Washington St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.3 34.8	D D	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.3 34.8	D D	0.000 0.000	No No
4. Washington St to Sassafras St	NB SB	4 Main 4 Main	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.4 32.0	D D	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.4 32.0	D D	0.000 0.000	No No
5. Sassafras St to Pacific Hwy Viaduct	NB SB	4 Main 4 Main	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.1 34.1	D D	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.1 34.1	D D	0.000 0.000	No No
6. Pacific Hwy Viaduct to Laurel St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	245,980	8,880 9,470	1,966 2,097	2,126 2,130	0.925 0.985	37.7 43.3	E E	258,970	**9,607** **10,008**	**2,127** **2,216**	**2,126** **2,130**	**1.000** **1.040**	— —	**F** **F**	**0.075** **0.055**	**Yes** **Yes**
7. Laurel St to Hawthorn St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	272,610	9,840 10,490	2,179 2,322	2,119 2,112	1.028 1.099	— —	F F	285,600	**10,567** **11,028**	**2,340** **2,442**	**2,119** **2,112**	**1.104** **1.156**	— —	**F** **F**	**0.076** **0.057**	**Yes** **Yes**
8. Hawthorn St to 1st Ave	NB SB	4 Main 4 Main	225,910	8,160 8,700	2,258 2,408	2,216 2,220	1.019 1.085	— —	F F	238,900	**8,887** **9,238**	**2,460** **2,556**	**2,216** **2,220**	**1.110** **1.151**	— —	**F** **F**	**0.091** **0.066**	**Yes** **Yes**
9. 1st Ave to 6th Ave	NB SB	5 Main 5 Main	309,610	11,180 11,920	2,475 2,639	2,216 2,213	1.117 1.192	— —	F F	321,560	**11,907** **12,458**	**2,636** **2,758**	**2,216** **2,213**	**1.190** **1.246**	— —	**F** **F**	**0.073** **0.054**	**Yes** **Yes**
10. 6th Ave to SR-163	NB SB	5 Main 5 Main	252,960	9,130 9,740	2,021 2,156	2,216 2,216	0.912 0.973	37.4 42.4	E E	263,870	**9,799** **10,235**	**2,170** **2,266**	**2,216** **2,216**	**0.979** **1.023**	**43.0** —	**E** **F**	**0.067** **0.050**	**Yes** **Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB WB	4 Main 4 Main	116,880	3,010 4,700	823 1,285	2,248 2,259	0.366 0.569	13.2 20.3	B C	118,440	3,097 4,765	846 1,302	2,248 2,259	0.376 0.576	13.6 20.5	B C	0.010 0.007	No No
12. I-5 to Morena Blvd	EB WB	4 Main 3 Main	139,450	5,590 4,390	1,528 1,600	2,241 2,248	0.682 0.712	24.9 26.0	C C	145,680	5,848 4,739	1,598 1,727	2,241 2,248	0.713 0.768	26.2 28.5	D D	0.031 0.056	No No

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TABLE 12–4
YEAR 2050 WITH ALTERNATIVE 2
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 2: Higher-Density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	232,620	9,330	2,040	2,126	0.960	40.8	E	238,850	**9,588**	**2,097**	**2,126**	**0.986**	**43.5**	**E**	**0.026**	**Yes**
	WB	5 Main		7,330	1,603	1,948	0.823	29.1	D		7,679	1,679	1,948	0.862	31.7	D	0.039	No
14. Taylor St to Hotel Circle	EB	4 Main	218,490	8,760	2,394	2,229	1.074	—	F	227,840	**9,147**	**2,500**	**2,229**	**1.122**	**—**	**F**	**0.048**	**Yes**
	WB	5 Main		6,880	1,504	2,237	0.672	24.6	C		7,404	1,619	2,237	0.724	26.7	D	0.052	No
15. Hotel Circle to SR-163	EB	4 Main	233,750	9,370	2,558	2,229	1.148	—	F	243,100	**9,757**	**2,664**	**2,229**	**1.195**	**—**	**F**	**0.047**	**Yes**
	WB	5 Main		7,360	1,608	2,229	0.721	26.8	D		7,884	1,722	2,229	0.773	29.1	D	0.052	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. Bold typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative							2 SOV
	AM	465	335	130	23	3,250	130
	PM	505	318	187	35	4,675	187
Year 2050 with Alternative 2							2 SOV
	AM	725	335	390	70	9,738	390
	PM	731	318	413	78	10,313	413
Δ	**AM**			**260**	**46**	**6,488**	**260**
	PM			**226**	**43**	**5,638**	**226**

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.
3. **Bold** typeface and shading represent a significant impact.

12.5 Significant Impacts and Mitigation Measures

Alternative 2 results in the same significant cumulative impacts as Alternative 1 with the addition of newly impacted locations under this Proposed Action alternative. Alternative 2: Higher-density Mixed-use Revitalization would have significant cumulative impacts at **25** intersections, on **24** street segments, on **10** freeways segments, and at **one (1)** ramp meter.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange that would improve access to the OTC Site as well as reduce area traffic on local streets. This network improvement is proposed as mitigation for several impacted locations. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (only under the Alternative 4 and Alternative 5 scenarios where the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. A concept plan showing this improvement is depicted later on in *Section 29.0* of this report.

For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints and where the reconstructed interchange would not fully mitigate, it is recommended that the Proposed Action alternative contribute to the implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 12–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 12–1 shows an illustration of the significantly impacted locations.

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Alt 2-I-1	2	Taylor St/ I-8 EB Ramps	San Diego/ Caltrans	Per the Mission Valley Community Plan, the entirety of Hotel Circle will be transformed from a bi-directional collector to a one-way couplet running in the clockwise direction. As part of this network change, the Taylor Street/I-8 Eastbound Ramps interchange will be eliminated and replaced by a new signalized interchange at I-8 with the future connection of Via Las Cumbres. Given the unknown timing for implementation and the lack of an identified funding source in the Mission Valley Community Plan, the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-2	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-3	7	Rosecrans St/ Jefferson St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/ Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic is observed would not be beneficial to the major street traffic flow. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-4	8	Camino Del Rio W/ Hancock St	San Diego	The intersection is built out with regard to available right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-5	11	Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-6	12	Rosecrans St/ Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action alternative, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-7	13	Rosecrans St/ Lytton St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-8	14	Truxtun Rd/ Lytton St/ Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.	Yes
Alt 2-I-9	15	Midway Dr/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/ Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-10	16	Barnett Ave/ Midway Dr	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Enterprise Street intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the southbound right-turning and eastbound left-turning movements is substantial. Those additional trips result in a significant delay at this intersection. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Enterprise Street, reconstructing this intersection in combination with the Midway Drive/ Enterprise Street intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-11	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-12	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 2-I-13	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-14	22	Old Town Ave/ San Diego Ave	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Extra lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-15	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Moore Street intersection that effectively operates as the I-5 North interchange with Old Town Avenue. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-I-16	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Hancock Street intersection that effectively operates as the I-5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5

YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-17	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-I-18	26	Witherby St/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-19	27	Tripoli Ave/ Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-I-20	28	Noell St/ Hancock St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.	Yes
Alt 2-I-21	30	Washington St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and concluded impacts to this intersection would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-22	33	Pacific Hwy/ Sassafras St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-23	34	Pacific Hwy / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-I-24	35	Harbor Dr / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-I-25	36	Pacific Hwy / Sea World Dr	San Diego	There are no planned improvements in the Mission Bay Park Master Plan at this intersection. In order to improve operations at this intersection, the Proposed Action alternative should construct an additional southbound left-turn lane from SeaWorld Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.	Yes
STREET SEGMENTS					
		Rosecrans Street			
Alt 2-S-1	1	Dewey Rd to Lytton St	San Diego	Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-2	2	Lytton St to Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5

YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-3	3	Midway Dr to Sports Arena Blvd	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-4	4	Sports Arena Blvd to Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-5	5	E: Kurtz St to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a s four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Taylor Street			
Alt 2-S-6	9	Presidio Dr to I-8 East Ramp	San Diego	There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town Community, the Community Plan does not propose any road widenings or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
		Pacific Highway			
Alt 2-S-7	11	SeaWorld Dr to Taylor St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-8	13	Kurtz St to Sports Arena Blvd	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-9	14	Sports Arena Blvd to Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 2-S-10	15	Barnett Ave to Witherby St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-11	16	Witherby St to W. Washington St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-12	17	W. Washington St to Sassafras St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Morena Boulevard			
Alt 2-S-13	19	Friars Rd to I-8	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Linda Vista Road			

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-14	20	Morena Blvd to Colusa St	San Diego	Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Kurtz Street			
Alt 2-S-15	21	Rosecrans to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Sports Arena Blvd			
Alt 2-S-16	25	Rosecrans St to Enterprise St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Midway Drive			
Alt 2-S-17	26	East Dr to Rosecrans St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 12–5

YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-18	27	Rosecrans St to Bogley Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-19	28	Bogley Dr to Barnett Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports LOS C results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact on this street segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Lytton Street			
Alt 2-S-20	29	Rosecrans St to St. Charles St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
		Barnett Avenue			
Alt 2-S-21	30	St. Charles St to Henderson Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 2-S-22	31	Henderson Ave to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Hancock Street			
Alt 2-S-23	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 12–5

YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-S-24	33	Witherby St to Noell St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
		W. Washington Street			
Alt 2-S-25	37	Hancock St to W. University Ave	San Diego	There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
FREEWAYS					
Alt 2-F-1	2	I-5: I-8 to Old Town Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-F-2	6	I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 2-F-3	7	I-5: Laurel St to Hawthorn St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 2-F-4	8	I-5: Hawthorn St to 1st Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 2-F-5	9	I-5: 1st Ave to 6th Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-F-6	10	I-5: 6th Ave to SR-163	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 2-F-7	12	I-8: I-5 to Morena Blvd	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-F-8	13	I-8: Morena Blvd to Hotel Circle/Taylor Street	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 2-F-9	14	I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 12–5
YEAR 2050 WITH ALTERNATIVE 2 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 2-F-10	15	I-8: Hotel Circle to SR-163	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
RAMP METER					
Alt 2-R-1	1	Moore St/I-5 NB On-Ramp	Caltrans	Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to I-5 northbound. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

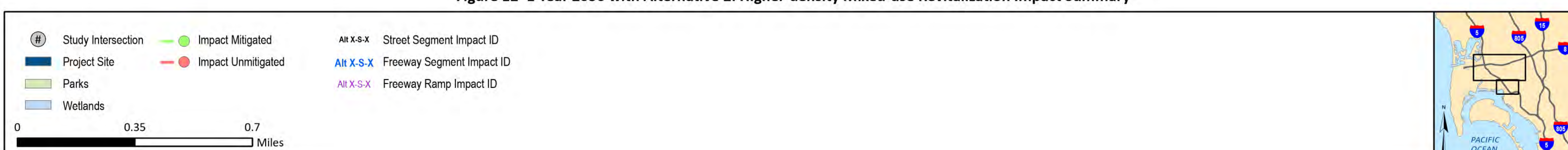
General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?

IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
2	Alt 2-I-1	22	Alt 2-I-14
6	Alt 2-I-2	23	Alt 2-I-15
7	Alt 2-I-3	24	Alt 2-I-16
8	Alt 2-I-4	25	Alt 2-I-17
11	Alt 2-I-5	26	Alt 2-I-18
12	Alt 2-I-6	27	Alt 2-I-19
13	Alt 2-I-7	28	Alt 2-I-20
14	Alt 2-I-8	30	Alt 2-I-21
15	Alt 2-I-9	33	Alt 2-I-22
16	Alt 2-I-10	34	Alt 2-I-23
18	Alt 2-I-11	35	Alt 2-I-24
19	Alt 2-I-12	36	Alt 2-I-25
20	Alt 2-I-13		

Figure 12–1 Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization Impact Summary



13.0 YEAR 2050 WITH ALTERNATIVE 3: LOWER-DENSITY MIXED-USE REVITALIZATION ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 conditions with the addition of Alternative 3: Lower-density Mixed-Use Revitalization traffic. No changes to the street network over existing conditions were assumed in the analysis. For the purposes of this study, impacts identified under Year 2050 conditions are considered "cumulative" transportation impacts.

13.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization conditions. ***Table 13–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #6 Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #8. Camino Del Rio W. / Hancock Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS F during the p.m. peak hour**
- **Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour**
- **Intersection #13. Rosecrans Street / Lytton Street – LOS E during the a.m. and p.m. peak hours**
- **Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #15. Midway Drive / Enterprise Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours**
- **Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours**

- **<u>Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #25. Witherby Street / Hancock Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #26. Witherby Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #27. Witherby Street / Tripoli Avenue – LOS F during the p.m. peak hour</u>**
- **<u>Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hour</u>**
- **<u>Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour</u>**
- Intersection #31. W. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour
- **<u>Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #36. Pacific Highway / Sea World Drive – LOS E/F during the a.m./p.m. peak hours</u>**
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Based on the established significance criteria, **<u>23 significant cumulative impacts</u>** were calculated with the addition of Alternative 3 traffic at the intersections **<u>bolded and underlined</u>** above since the Proposed Action alternative-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 second for LOS F operating intersections.

Appendix N contains the intersection analysis worksheets for the Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization scenario.

13.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization conditions. ***Table 13–2*** reports the Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization daily street segment operations. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **<u>Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)</u>**
- **<u>Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)</u>**

- **<u>Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)</u>**
- **<u>Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)</u>**
- **<u>Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)</u>**
- **<u>Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)</u>**
- **<u>Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor Street (LOS F)</u>**
- **<u>Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS F)</u>**
- **<u>Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)</u>**
- **<u>Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)</u>**
- **<u>Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)</u>**
- **<u>Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)</u>**
- **<u>Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)</u>**
- **<u>Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS F)</u>**
- **<u>Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)</u>**
- **<u>Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)</u>**
- **<u>Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)</u>**
- **<u>Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)</u>**
- **<u>Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)</u>**
- **<u>Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)</u>**
- **<u>Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)</u>**
- **<u>Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)</u>**
- **<u>Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)</u>**
- **<u>Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)</u>**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- **<u>Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)</u>**

Based on the established significance criteria, **<u>25 significant cumulative impact</u>** were calculated with the addition of Alternative 3 traffic on study area street segments **<u>bolded and underlined</u>** above since the Proposed Action alternative-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

13.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization conditions. ***Tables 13–3*** and ***13–4*** report the Year 2050 with Alternative 3: Lower-Density Mixed-Use freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- <u>**Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)**</u>
- <u>**Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS E/F – p.m. peak)**</u>
- <u>**Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)**</u>
- <u>**Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)**</u>
- <u>**Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**</u>
- <u>**Freeway Segment #10. I-5: 6th Avenue to SR-163, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS E/F – p.m. peak)**</u>
- <u>**Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)**</u>
- <u>**Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)**</u>
- <u>**Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**</u>
- <u>**Freeway Segment #15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**</u>

Based on the established significance criteria, <u>**ten significant cumulative impacts**</u> were calculated with the addition of Alternative 3 traffic on study area freeway segments <u>**bolded and underlined**</u> above since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix O contains the detailed HCS calculations sheets for the Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization scenario.

13.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization conditions. ***Table 13–5*** reports the Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization ramp meter operations.

- **Ramp Meter #1. Moore Street/ I-5 NB On-ramp** – Delays of 54/64 minutes and queues of 304/337 vehicles during the a.m. / p.m. peak hours are calculated at the *Moore Street / NB I-5 On-Ramp* under Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization conditions.

Based on the established significance criteria, **one (1) significant cumulative impact** was calculated with the addition of Alternative 3 traffic at the location **bolded and underlined** above since the total delay at this on ramp is more than 15 minutes during the a.m. and p.m. peak hours and the increase in the delay at the ramp meter is greater than 2.0 minutes.

TABLE 13–1
YEAR 2050 WITH ALTERNATIVE 3
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 3		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM PM	11.4 29.4	B D	12.5 29.4	B D	1.1 0.0	No
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	15.6 27.5	B C	18.9 44.1	B D	3.3 16.6	No
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	21.3 14.5	C B	28.0 16.3	C B	6.7 1.8	No
4. Taylor St/ Juan St	Signal	AM PM	15.0 34.1	B C	15.7 40.5	B D	0.7 6.4	No
5. Congress St/ Taylor St	Signal	AM PM	12.9 33.1	B C	13.1 36.0	B D	0.2 2.9	No
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM PM	95.9 97.0	F F	**124.9** **150.4**	**F** **F**	**29.0** **53.4**	**Yes**
7. Rosecrans St/ Jefferson St	TWSC [e]	AM PM	43.5 816.6	E F	**46.5** **864.4**	**E** **F**	**3.0** **47.8**	**Yes**
8. Camino Del Rio W/ Hancock St	Signal	AM PM	52.3 139.2	D F	**55.6** **143.9**	**E** **F**	**3.3** **4.7**	**Yes**
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	15.7 47.8	B D	15.3 47.4	B D	-0.4 -0.4	No
10. Rosecrans St/ Kurtz St	Signal	AM PM	14.6 47.0	B D	16.3 46.1	B D	1.7 -0.9	No
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	25.7 72.4	C E	49.6 **98.7**	D **F**	23.9 **26.3**	**Yes**
12. Rosecrans St/ Midway Dr	Signal	AM PM	37.2 57.3	D E	43.2 **66.1**	D **E**	6.0 **8.8**	**Yes**
13. Rosecrans St/ Lytton St	Signal	AM PM	62.9 60.4	E E	**76.4** **73.3**	**E** **E**	**13.5** **12.9**	**Yes**
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	60.6 107.4	E F	61.7 **115.0**	E **F**	1.1 **7.6**	**Yes**
15. Midway Dr/ Enterprise St	Signal	AM PM	21.6 22.7	C C	**43.9** **80.2**	**E** **F**	**22.3** **57.5**	**Yes**
16. Barnett Ave/ Midway Dr	Signal	AM PM	9.7 14.1	A B	17.6 44.6	B D	7.9 30.5	No

(Continued on Next Page)

TABLE 13–1
YEAR 2050 WITH ALTERNATIVE 3
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 3		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.6 12.8	B B	13.2 14.1	B B	0.6 1.3	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	150.0 303.1	F F	**471.5** **806.4**	**F** **F**	**321.5** **503.3**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	16.6 433.8	C F	**50.5** **1,183.6**	**F** **F**	**33.9** **749.8**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	141.5 232.9	F F	**287.7** **367.8**	**F** **F**	**146.2** **134.9**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E	**152.0** **75.0**	**F** **E**	**9.9** **9.3**	**Yes**
23. Old Town Ave/ Moore St	Signal	AM PM	620.4 183.9	F F	**2,186.1** **302.4**	**F** **F**	**1,565.7** **118.5**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	106.6 97.5	F F	**294.5** **262.0**	**F** **F**	**187.9** **164.5**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	28.2 70.6	D F	**195.1** **273.5**	**F** **F**	**166.9** **202.9**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	21.3 124.7	C F	**125.2** **389.8**	**F** **F**	**103.9** **265.1**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.2 26.4	B D	20.9 **166.3**	C **F**	10.7 **139.9**	**Yes**
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F	**44.5** **132.2**	**E** **F**	**5.6** **10.5**	**Yes**
29. Washington St/ San Diego Ave	Signal	AM PM	28.8 16.8	C B	28.9 16.9	C B	0.1 0.1	No
30. Washington St/ Hancock St	Signal	AM PM	25.3 61.2	C E	25.4 **69.8**	C **E**	0.1 **8.6**	**Yes**
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.9 128.8	C F	28.0 128.9	C F	0.1 0.1	No
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.2	B C	15.3 31.3	B C	0.1 2.1	No
(Continued on Next Page)								

TABLE 13–1
YEAR 2050 WITH ALTERNATIVE 3
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative		Year 2050 With Alternative 3		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM	240.0	F	**242.8**	**F**	**2.8**	**Yes**
		PM	130.5	F	**138.3**	**F**	**7.8**	
34. Pacific Hwy / Laurel St	Signal	AM	154.2	F	**157.8**	**F**	**3.6**	**Yes**
		PM	172.9	F	**175.0**	**F**	**2.1**	
35. Harbor Dr / Laurel St	Signal	AM	125.1	F	**126.6**	**F**	**1.5**	**Yes**
		PM	115.1	F	**119.9**	**F**	**4.8**	
36. Pacific Hwy / Sea World Dr	Signal	AM	32.4	C	**68.0**	**E**	**35.6**	**Yes**
		PM	88.7	F	**120.0**	**F**	**31.3**	
37. Sea World Dr / I-5 SB Ramps	Signal	AM	35.9	D	36.0	D	0.1	No
		PM	21.0	C	21.1	C	0.1	
38. Sea World Dr / I-5 NB Ramps	Signal	AM	44.6	D	51.4	D	6.8	No
		PM	81.9	F	82.0	F	0.1	
39. Morena Blvd / Linda Vista Rd	Signal	AM	17.1	B	17.6	B	0.5	No
		PM	24.3	C	25.9	C	1.6	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED DELAY/LOS THRESHOLDS		UNSIGNALIZED DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 13–2
YEAR 2050 WITH ALTERNATIVE 3
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 3			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	56,770	F	1.514	**58,500**	**F**	**1.560**	**0.046**	**1,730**	**Yes**
2. Lytton St to Midway Dr	50,000	52,460	F	1.049	**54,190**	**F**	**1.084**	**0.035**	**1,730**	**Yes**
3. Midway Dr to Sports Arena Blvd	50,000	62,240	F	1.245	**67,080**	**F**	**1.342**	**0.097**	**4,840**	**Yes**
4. Sports Arena Blvd to Kurtz St	30,000	33,010	F	1.100	**36,470**	**F**	**1.216**	**0.116**	**3,460**	**Yes**
5. E: Kurtz St to Pacific Hwy	30,000	28,240	E	0.941	**28,930**	**E**	**0.964**	**0.023**	**690**	**Yes**
Taylor Street										
6. Pacific Hwy to Congress St	45,000	18,960	B	0.421	22,420	B	0.498	0.077	3,460	No
7. Congress St to Juan St	45,000	17,600	B	0.391	21,060	B	0.468	0.077	3,460	No
8. Juan St to Presidio Dr	40,000	20,230	B	0.506	23,340	B	0.584	0.078	3,110	No
9. Presidio Dr to I-8 East Ramp	10,000	14,800	F	1.480	**16,880**	**F**	**1.688**	**0.208**	**2,080**	**Yes**
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	12,910	D	0.861	12,910	D	0.861	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	21,610	F	1.441	**25,070**	**F**	**1.671**	**0.230**	**3,460**	**Yes**
12. Taylor St to Kurtz St	50,000	20,360	B	0.407	26,590	B	0.532	0.125	6,230	No
13. Kurtz St to Sports Arena Blvd	50,000	45,060	E	0.901	**66,850**	**F**	**1.337**	**0.436**	**21,790**	**Yes**
14. Sports Arena Blvd to Barnett Ave	50,000	50,390	F	1.008	**63,530**	**F**	**1.271**	**0.263**	**13,140**	**Yes**
15. Barnett Ave to Witherby St	80,000	93,240	F	1.166	**113,300**	**F**	**1.416**	**0.250**	**20,060**	**Yes**
16. Witherby St to W. Washington St	80,000	98,530	F	1.232	**110,640**	**F**	**1.383**	**0.151**	**12,110**	**Yes**
17. W. Washigton St to Sassafras St	60,000	61,200	F	1.020	**71,580**	**F**	**1.193**	**0.173**	**10,380**	**Yes**
18. Sassafras St to W. Laurel St	50,000	23,390	B	0.468	24,770	B	0.495	0.027	1,380	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	43,760	F	1.094	**44,800**	**F**	**1.120**	**0.026**	**1,040**	**Yes**
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	29,330	E	0.978	**30,020**	**F**	**1.001**	**0.023**	**690**	**Yes**
Kurtz Street										
21. Rosecrans St to Pacific Hwy	8,000	21,750	F	2.719	**24,520**	**F**	**3.065**	**0.346**	**2,770**	**Yes**
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	28,750	D	0.767	29,790	D	0.794	0.027	1,040	No
23. Kemper St to East Dr	45,000	29,370	C	0.653	30,750	C	0.683	0.030	1,380	No
24. East Dr to Rosecrans St	45,000	28,330	C	0.630	30,060	C	0.668	0.038	1,730	No
25. Rosecrans St to Enterprise St	8,000	6,330	D	0.791	**7,370**	**E**	**0.921**	**0.130**	**1,040**	**Yes**
Midway Drive										
26. East Dr to Rosecrans St	30,000	40,650	F	1.355	**41,340**	**F**	**1.378**	**0.023**	**690**	**Yes**
27. Rosecrans St to Bogley Dr	30,000	27,310	E	0.910	**30,420**	**F**	**1.014**	**0.104**	**3,110**	**Yes**
28. Bogley Dr to Barnett Ave	30,000	27,140	E	0.905	**36,130**	**F**	**1.204**	**0.299**	**8,990**	**Yes**
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	29,980	E	0.999	**31,360**	**F**	**1.045**	**0.046**	**1,380**	**Yes**

(Continued on Next Page)

TABLE 13–2
YEAR 2050 WITH ALTERNATIVE 3
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative			Year 2050 With Alternative 3			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	32,210	F	1.074	**33,590**	**F**	**1.120**	**0.046**	**1,380**	**Yes**
31. Henderson Ave to Pacific Hwy	30,000	34,870	F	1.162	**44,210**	**F**	**1.474**	**0.312**	**9,340**	**Yes**
Hancock Street										
32. Old Town Ave to Witherby St	8,000	14,050	F	1.756	**21,660**	**F**	**2.708**	**0.952**	**7,610**	**Yes**
33. Witherby St to Noell St	8,000	6,430	D	0.804	**6,780**	**E**	**0.848**	**0.044**	**350**	**Yes**
34. Noell St to W. Washington St	8,000	22,770	F	2.846	22,770	F	2.846	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	24,690	F	3.086	24,690	F	3.086	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	29,210	C	0.730	30,940	D	0.774	0.044	1,730	No
37. Hancock St to W. University Ave	40,000	34,950	D	0.874	**36,680**	**E**	**0.917**	**0.043**	**1,730**	**Yes**

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 13–3
YEAR 2050 WITH ALTERNATIVE 3
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 3: Lower-density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,840	1,254	2,160	0.581	20.4	C	220,600	7,038	1,290	2,160	0.597	21.0	C	0.016	No
	SB	5 Main + 1 Aux		8,310	1,524	2,160	0.706	25.1	C		8,435	1,547	2,174	0.712	25.1	C	0.006	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	7,870	1,742	2,133	0.817	30.2	D	239,450	8,216	1,819	2,133	0.853	32.4	D	0.036	No
	SB	5 Main		8,950	1,982	2,245	0.883	35.1	E		**9,169**	**2,030**	**2,245**	**0.904**	**36.6**	**E**	**0.021**	**Yes**
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	1,669	2,130	0.784	28.4	D	222,480	7,540	1,669	2,130	0.784	28.4	D	0.000	No
	SB	4 Main + 1 Aux		8,570	1,897	2,133	0.889	34.9	D		8,570	1,897	2,133	0.889	34.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	1,644	2,237	0.735	27.2	D	175,330	5,940	1,644	2,237	0.735	27.5	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	1,710	2,237	0.764	28.5	D	182,450	6,180	1,710	2,237	0.764	28.5	D	0.000	No
	SB	4 Main		7,030	1,946	2,241	0.868	34.3	D		7,030	1,946	2,241	0.868	34.3	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,330	1,844	2,126	0.867	33.4	D	254,630	**8,591**	**1,902**	**2,126**	**0.895**	**35.3**	**E**	**0.028**	**Yes**
	SB	4 Main + 1 Aux		9,480	2,099	2,130	0.985	43.4	E		**9,892**	**2,190**	**2,130**	**1.028**	**—**	**F**	**0.043**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,230	2,044	2,119	0.965	41.3	E	281,260	**9,491**	**2,101**	**2,119**	**0.992**	**44.0**	**E**	**0.027**	**Yes**
	SB	4 Main + 1 Aux		10,500	2,325	2,112	1.101	—	F		**10,912**	**2,416**	**2,112**	**1.144**	**—**	**F**	**0.043**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	7,650	2,117	2,216	0.955	40.8	E	234,560	**7,911**	**2,189**	**2,216**	**0.988**	**43.8**	**E**	**0.033**	**Yes**
	SB	4 Main		8,700	2,408	2,220	1.085	—	F		**9,112**	**2,522**	**2,220**	**1.136**	**—**	**F**	**0.051**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	309,610	10,490	2,322	2,216	1.048	—	F	317,570	**10,730**	**2,376**	**2,216**	**1.072**	**—**	**F**	**0.024**	**Yes**
	SB	5 Main		11,930	2,641	2,213	1.193	—	F		**12,309**	**2,725**	**2,213**	**1.231**	**—**	**F**	**0.038**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	252,960	8,570	1,897	2,216	0.856	33.8	D	260,220	**8,789**	**1,946**	**2,216**	**0.878**	**35.1**	**E**	**0.022**	**Yes**
	SB	5 Main		9,750	2,159	2,216	0.974	42.5	E		**10,096**	**2,235**	**2,216**	**1.009**	**—**	**F**	**0.035**	**Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,840	1,050	2,248	0.467	16.9	B	117,920	3,871	1,058	2,248	0.471	17.0	B	0.004	No
	WB	4 Main		4,880	1,334	2,259	0.591	21.0	C		4,929	1,347	2,259	0.596	21.2	C	0.005	No
12. I-5 to Morena Blvd	EB	4 Main	139,450	4,080	1,115	2,241	0.498	18.1	C	143,600	4,278	1,169	2,241	0.522	19.0	C	0.024	No
	WB	3 Main		5,750	2,096	2,248	0.932	38.8	E		**5,875**	**2,141**	**2,248**	**0.952**	**40.5**	**E**	**0.020**	**Yes**

(Continued on Next Page)

TABLE 13–3
YEAR 2050 WITH ALTERNATIVE 3
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 3: Lower-density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	232,620	6,800	1,487	2,126	0.699	24.6	C	236,770	6,998	1,530	2,126	0.720	25.5	C	0.021	No
	WB	5 Main		9,600	2,099	1,948	1.078	—	F		**9,725**	**2,127**	**1,948**	**1.092**	**—**	**F**	**0.014**	**Yes**
14. Taylor St to Hotel Circle	EB	4 Main	218,490	6,390	1,747	2,229	0.784	29.6	D	224,720	6,687	1,828	2,229	0.820	31.5	D	0.036	No
	WB	5 Main		9,020	1,972	2,237	0.882	35.2	E		**9,208**	**2,014**	**2,237**	**0.900**	**36.4**	**E**	**0.018**	**Yes**
15. Hotel Circle to SR-163	EB	4 Main	233,750	6,830	1,865	2,229	0.837	32.4	D	239,980	7,127	1,946	2,229	0.873	34.6	D	0.036	No
	WB	5 Main		9,650	2,108	2,229	0.946	39.9	E		**9,838**	**2,149**	**2,229**	**0.964**	**41.6**	**E**	**0.018**	**Yes**

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 13–4
YEAR 2050 WITH ALTERNATIVE 3
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 3: Lower-Density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	216,450	6,800	1,247	2,160	0.577	20.3	C	220,600	6,971	1,278	2,174	0.588	20.3	C	0.011	No
	SB	5 Main + 1 Aux		9,610	1,762	2,160	0.816	30.4	D		9,845	1,805	2,094	0.862	34.1	D	0.046	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	232,280	8,390	1,858	2,133	0.871	33.6	D	239,450	**8,690**	**1,924**	**2,133**	**0.902**	**35.8**	**E**	**0.031**	**Yes**
	SB	5 Main		8,940	1,979	2,245	0.882	35.1	E		**9,351**	**2,070**	**2,245**	**0.922**	**38.0**	**E**	**0.040**	**Yes**
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	8,030	1,778	2,130	0.835	31.3	D	222,480	8,030	1,778	2,130	0.835	31.3	D	0.000	No
	SB	4 Main + 1 Aux		8,560	1,895	2,133	0.888	34.8	D		8,560	1,895	2,133	0.888	34.8	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	6,330	1,752	2,237	0.783	29.4	D	175,330	6,330	1,752	2,237	0.783	29.4	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,590	1,824	2,237	0.815	31.1	D	182,450	6,590	1,824	2,237	0.815	31.1	D	0.000	No
	SB	4 Main		7,020	1,943	2,241	0.867	34.1	D		7,020	1,943	2,241	0.867	34.1	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	245,980	8,880	1,966	2,126	0.925	37.7	E	254,630	**9,370**	**2,075**	**2,126**	**0.976**	**42.4**	**E**	**0.051**	**Yes**
	SB	4 Main + 1 Aux		9,470	2,097	2,130	0.985	43.3	E		**9,827**	**2,176**	**2,130**	**1.022**	**—**	**F**	**0.037**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	272,610	9,840	2,179	2,119	1.028	—	F	281,260	10,330	2,287	2,119	1.079	—	F	0.051	Yes
	SB	4 Main + 1 Aux		10,490	2,322	2,112	1.099	—	F		10,847	2,402	2,112	1.137	—	F	0.038	Yes
8. Hawthorn St to 1st Ave	NB	4 Main	225,910	8,160	2,258	2,216	1.019	—	F	234,560	8,650	2,394	2,216	1.080	—	F	0.061	Yes
	SB	4 Main		8,700	2,408	2,220	1.085	—	F		9,057	2,506	2,220	1.129	—	F	0.044	Yes
9. 1st Ave to 6th Ave	NB	5 Main	309,610	11,180	2,475	2,216	1.117	—	F	317,570	11,631	2,575	2,216	1.162	—	F	0.045	Yes
	SB	5 Main		11,920	2,639	2,213	1.192	—	F		12,249	2,712	2,213	1.225	—	F	0.033	Yes
10. 6th Ave to SR-163	NB	5 Main	252,960	9,130	2,021	2,216	0.912	37.4	E	260,220	**9,541**	**2,112**	**2,216**	**0.953**	**40.6**	**E**	**0.041**	**Yes**
	SB	5 Main		9,740	2,156	2,216	0.973	42.4	E		10,040	2,223	2,216	1.003	—	F	0.030	Yes
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,010	823	2,248	0.366	13.2	B	117,920	3,069	839	2,248	0.373	13.5	B	0.007	No
	WB	4 Main		4,700	1,285	2,259	0.569	20.3	C		4,743	1,296	2,259	0.574	20.4	C	0.005	No
12. I-5 to Morena Blvd	EB	4 Main	139,450	5,590	1,528	2,241	0.682	24.9	C	143,600	5,761	1,575	2,241	0.703	25.7	C	0.021	No
	WB	3 Main		4,390	1,600	2,248	0.712	26.0	C		4,625	1,686	2,248	0.750	27.7	D	0.038	No

(Continued on Next Page)

TABLE 13–4
YEAR 2050 WITH ALTERNATIVE 3
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative							Year 2050 with Alternative 3: Lower-Density Mixed-used Revitalization							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	232,620	9,330	2,040	2,126	0.960	40.8	E	236,770	**9,501**	**2,078**	**2,126**	**0.977**	**42.6**	**E**	**0.017**	**Yes**
	WB	5 Main		7,330	1,603	1,948	0.823	29.1	D		7,565	1,654	1,948	0.849	30.8	D	0.026	No
14. Taylor St to Hotel Circle	EB	4 Main	218,490	8,760	2,394	2,229	1.074	—	F	224,720	**9,017**	**2,465**	**2,229**	**1.106**	**—**	**F**	**0.032**	**Yes**
	WB	5 Main		6,880	1,504	2,237	0.672	24.6	C		7,233	1,582	2,237	0.707	26.0	C	0.035	No
15. Hotel Circle to SR-163	EB	4 Main	233,750	9,370	2,558	2,229	1.148	—	F	239,980	**9,627**	**2,629**	**2,229**	**1.179**	**—**	**F**	**0.031**	**Yes**
	WB	5 Main		7,360	1,608	2,229	0.721	26.8	D		7,713	1,685	2,229	0.756	28.3	D	0.035	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative							2 SOV
	AM	465	335	130	23	3,250	130
	PM	505	318	187	35	4,675	187
Year 2050 with Alternative 3							2 SOV
	AM	639	335	304	54	7,588	304
	PM	655	318	337	64	8,425	337
Δ	**AM**			**174**	**31**	**4,338**	**174**
	PM			**150**	**28**	**3,750**	**150**

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.

b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).

c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.

d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.

e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.
3. **Bold** typeface and shading represent a significant impact.

13.5 Significant Impacts and Mitigation Measures

Alternative 3 results in fewer significant cumulative impacts as compared to Alternative 2. Alternative 3: Lower-density Mixed-use Revitalization would have significant cumulative impacts at **23** intersections, on **25** street segments, on **10** freeways segments, and at **one (1)** ramp meter.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange that would improve access to the OTC Site as well as reduce area traffic on local streets. This network improvement is proposed as mitigation for several impacted locations. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (only under the Alternative 4 and Alternative 5 scenarios where the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. A concept plan showing this improvement is depicted later on in *Section 29.0* of this report.

For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints and where the reconstructed interchange would not fully mitigate, it is recommended that the Proposed Action alternative contribute to the implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 13–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 13–1 shows an illustration of the significantly impacted locations.

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Alt 3-I-1	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-2	7	Rosecrans St/ Jefferson St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/ Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic is observed would not be beneficial to the major street traffic flow. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-3	8	Camino Del Rio W/ Hancock St	San Diego	The intersection is built out with regard to available right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-4	11	Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-5	12	Rosecrans St/ Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action alternative, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-I-6	13	Rosecrans St/ Lytton St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-7	14	Truxtun Rd/ Lytton St/ Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.	Yes
Alt 3-I-8	15	Midway Dr/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/ Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5

YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-9	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-I-10	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 3-I-11	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5

YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-12	22	Old Town Ave/ San Diego Ave	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Extra lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-I-13	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Moore Street intersection that effectively operates as the I-5 North interchange with Old Town Avenue. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-14	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Hancock Street intersection that effectively operates as the I-5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-15	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-16	26	Witherby St/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-17	27	Tripoli Ave/ Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-I-18	28	Noell St/ Hancock St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.	Yes
Alt 3-I-19	30	Washington St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and concluded impacts to this intersection would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-20	33	Pacific Hwy/ Sassafras St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-I-21	34	Pacific Hwy / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-I-22	35	Harbor Dr / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-I-23	36	Pacific Hwy / Sea World Dr	San Diego	There are no planned improvements in the Mission Bay Park Master Plan at this intersection. In order to improve operations at this intersection, the Proposed Action alternative should construct an additional southbound left-turn lane from SeaWorld Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.	Yes
STREET SEGMENTS					
		Rosecrans Street			
Alt 3-S-1	1	Dewey Rd to Lytton St	San Diego	Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-2	2	Lytton St to Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-3	3	Midway Dr to Sports Arena Blvd	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-4	4	Sports Arena Blvd to Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-5	5	E: Kurtz St to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a s four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Taylor Street			
Alt 3-S-6	9	Presidio Dr to I-8 East Ramp	San Diego	There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town Community, the Community Plan does not propose any road widenings or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Pacific Highway			

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-7	11	SeaWorld Dr to Taylor St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-8	13	Kurtz St to Sports Arena Blvd	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-9	14	Sports Arena Blvd to Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 3-S-10	15	Barnett Ave to Witherby St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-11	16	Witherby St to W. Washington St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-12	17	W. Washington St to Sassafras St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Morena Boulevard			
Alt 3-S-13	19	Friars Rd to I-8	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Linda Vista Road			

TABLE 13–5

YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-14	20	Morena Blvd to Colusa St	San Diego	Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Kurtz Street			
Alt 3-S-15	21	Rosecrans to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Sports Arena Blvd			
Alt 3-S-16	25	Rosecrans St to Enterprise St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Midway Drive			
Alt 3-S-17	26	East Dr to Rosecrans St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-18	27	Rosecrans St to Bogley Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 3-S-19	28	Bogley Dr to Barnett Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Lytton Street			
Alt 3-S-20	29	Rosecrans St to St. Charles St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Barnett Avenue			
Alt 3-S-21	30	St. Charles St to Henderson Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-22	31	Henderson Ave to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Hancock Street			
Alt 3-S-23	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-S-24	33	Witherby St to Noell St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
		W. Washington Street			
Alt 3-S-25	37	Hancock St to W. University Ave	San Diego	There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
FREEWAYS					
Alt 3-F-1	2	I-5: I-8 to Old Town Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-F-2	6	I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 3-F-3	7	I-5: Laurel St to Hawthorn St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 3-F-4	8	I-5: Hawthorn St to 1st Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 3-F-5	9	I-5: 1st Ave to 6th Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 13–5

YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-F-6	10	I-5: 6th Ave to SR-163	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 3-F-7	12	I-8: I-5 to Morena Blvd	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 13–5
YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-F-8	13	I-8: Morena Blvd to Hotel Circle/Taylor Street	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 3-F-9	14	I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 13–5

YEAR 2050 WITH ALTERNATIVE 3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 3-F-10	15	I-8: Hotel Circle to SR-163	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
RAMP METER					
Alt 3-R-1	1	Moore St/I-5 NB On-Ramp	Caltrans	Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to I-5 northbound. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

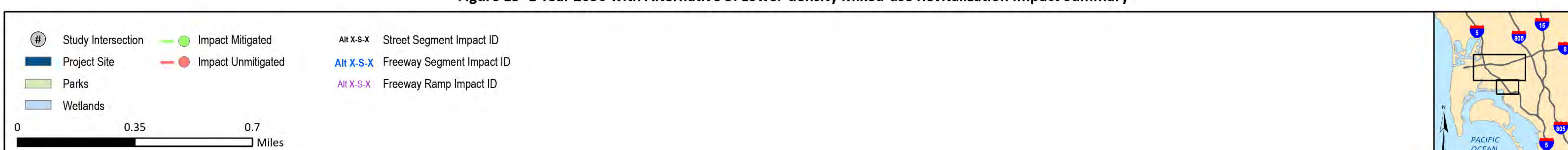
General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?

IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
6	Alt 3-I-1	23	Alt 3-I-13
7	Alt 3-I-2	24	Alt 3-I-14
8	Alt 3-I-3	25	Alt 3-I-15
11	Alt 3-I-4	26	Alt 3-I-16
12	Alt 3-I-5	27	Alt 3-I-17
13	Alt 3-I-6	28	Alt 3-I-18
14	Alt 3-I-7	30	Alt 3-I-19
15	Alt 3-I-8	33	Alt 3-I-20
18	Alt 3-I-9	34	Alt 3-I-21
19	Alt 3-I-10	35	Alt 3-I-22
20	Alt 3-I-11	36	Alt 3-I-23
22	Alt 3-I-12		

Figure 13–1 Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization Impact Summary



14.0 YEAR 2050 NO-ACTION ALTERNATIVE WITH AUTOMATED PASSENGER MOVER ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 No-Action Alternative with an Automated Passenger Mover conditions.

14.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 No-Action Alternative with Automated Passenger Mover conditions. ***Table 14–1*** reports the intersection operations during peak hour conditions. No changes to the street network over existing conditions were assumed in the analysis. The following intersections are calculated to operate at LOS E or F:

- Intersection #6 Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours
- Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours
- Intersection #8. Camino Del Rio W. / Hancock Street – LOS F during the p.m. peak hour
- Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E during the p.m. peak hour
- Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour
- Intersection #13. Rosecrans Street / Lytton Street – LOS E during the a.m. and p.m. peak hours
- Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours
- Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours
- Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the p.m. peak hour
- Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours
- Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours
- Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours
- Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours
- Intersection #25. Witherby Street / Hancock Street – LOS F/F during the a.m. and p.m. peak hours

- Intersection #26. Witherby Street / Pacific Highway – LOS E/F during the a.m. and p.m. peak hours
- Intersection #27. Witherby Street / Tripoli Street – LOS E during the p.m. peak hour
- Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hours
- Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour
- Intersection #31. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour
- Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours
- Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours
- Intersection #36. Pacific Highway / Sea World Drive – LOS F during the p.m. peak hour
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Appendix P contains the intersection analysis worksheets for the Year 2050 No-Action Alternative with Automated Passenger Mover scenario.

14.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 No-Action Alternative with Automated Passenger Mover. ***Table 14–2*** reports the Year 2050 No-Action Alternative street segment operations on a daily basis. The following segments are calculated to operate at LOS E or F:

- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)
- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS F)
- Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)
- Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor St (LOS F)
- Street Segment #13. Pacific Highway: Kurtz St to Sports Arena Boulevard (LOS F)
- Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)
- Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)

- Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS E)
- Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- Street Segment #37. Washington Street: Hancock Street to W. University Avenue (LOS E)

14.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 No-Action Alternative including an Automated Passenger Mover conditions. ***Tables 14–3*** report the Year 2050 No-Action Alternative including an Automated Passenger Mover freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F:

- Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)
- Freeway Segment #10. I-5: 6th Avenue to SR-163, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)
- Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)

- Freeway Segment #15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)

Appendix Q contains detailed HCS calculation sheets for the Year 2050 No-Action Alternative including an Automated Passenger Mover conditions.

14.4 Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 No-Action Alternative with Automated Passenger Mover. ***Table 14–4*** reports the Year 2050 No-Action Alternative ramp meter operations.

- Ramp Meter #1. Moore Street/ I-5 NB On-Ramp – Delays of 166/220 minutes and queues of 166/220 vehicles during the a.m. / p.m. peak hours are calculated at the *Moore Street / NB I-5 On-Ramp* under Year 2050 No-Action Alternative including an Automated Passenger Mover.

The delay at this ramp meter is more than 15 minutes. Therefore, this on-ramp is expected to operate at an unacceptable delay under the Year 2050 No-Action Alternative with Automated Passenger Mover conditions.

TABLE 14–1
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM	
			Delay [a]	LOS [b]
1. Taylor St/ Hotel Circle South	AWSC [c]	AM PM	11.6 29.4	B D
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	16.0 29.1	B C
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	21.5 14.7	C B
4. Taylor St/ Juan St	Signal	AM PM	15.1 34.4	B C
5. Congress St/ Taylor St	Signal	AM PM	12.9 33.4	B C
6. Pacific Hwy/ Rosecrans St/Taylor St	Signal	AM PM	97.1 100.3	F F
7. Rosecrans St/ Jefferson St	TWSC [d]	AM PM	43.5 816.6	E F
8. Camino Del Rio W/ Hancock St	Signal	AM PM	54.0 142.0	D F
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	17.3 50.1	B D
10. Rosecrans St/ Kurtz St	Signal	AM PM	15.0 50.8	B D
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	26.8 73.7	C E
12. Rosecrans St/ Midway Dr	Signal	AM PM	37.1 57.3	D E
13. Rosecrans St/ Lytton St	Signal	AM PM	65.5 61.6	E E
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	61.5 108.5	E F
15. Midway Dr/ Enterprise St	Signal	AM PM	21.6 22.7	C C
16. Barnett Ave/ Midway Dr	Signal	AM PM	9.8 14.4	A B

(Continued on Next Page)

TABLE 14–1
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.7 12.8	B B
18. Pacific Hwy/ Kurtz St	Signal	AM PM	198.8 352.0	F F
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	21.4 616.3	C F
20. Pacific Hwy/ Enterprise St	Signal	AM PM	208.9 279.8	F F
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*	
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E
23. Old Town Ave/ Moore St	Signal	AM PM	1,041.2 199.1	F F
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	154.4 112.4	F F
25. Witherby St/ Hancock St	AWSC	AM PM	154.7 95.1	F F
26. Witherby St/ Pacific Hwy	AWSC	AM PM	136.4 163.1	E F
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.8 35.1	B E
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F
29. Washington St/ San Diego Ave	Signal	AM PM	28.7 16.8	C B
30. Washington St/ Hancock St	Signal	AM PM	25.2 62.4	C E
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.8 128.2	C F
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.4	B C
(Continued on Next Page)				

TABLE 14–1
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
33. Pacific Hwy/ Sassafras St	Signal	AM PM	239.3 130.4	F F
34. Pacific Hwy / Laurel St	Signal	AM PM	152.8 172.8	F F
35. Harbor Dr / Laurel St	Signal	AM PM	125.6 115.5	F F
36. Pacific Hwy / Sea World Dr	Signal	AM PM	34.0 90.7	C F
37. Sea World Dr / I-5 SB Ramps	Signal	AM PM	35.5 20.9	D C
38. Sea World Dr / I-5 NB Ramps	Signal	AM PM	51.7 82.1	D F
39. Morena Blvd / Linda Vista Rd	Signal	AM PM	17.1 24.3	B C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. All-Way Stop Control. Average delay reported.
d. Two-Way Stop Control. Worst critical movement delay reported.

SIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS	UNSIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 14–2
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
Rosecrans Street					
1. Dewey Rd to Lytton St	5-Lane Collector (TWLTL)	37,500	57,900	F	1.544
2. Lytton St to Midway Dr	6-Lane Major	50,000	53,030	F	1.061
3. Midway Dr to Sports Arena Blvd	6-Lane Major	50,000	62,810	F	1.256
4. Sports Arena Blvd to Kurtz St	4-Lane Collector (TWLTL)	30,000	33,580	F	1.119
5. E: Kurtz St to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	28,520	E	0.951
Taylor Street					
6. Pacific Hwy to Congress St	5-Lane Major (Raised Median)	45,000	19,530	B	0.434
7. Congress St to Juan St	5-Lane Major (Raised Median)	45,000	18,170	B	0.404
8. Juan St to Presidio Dr	4-Lane Major (Raised Median)	40,000	20,800	B	0.520
9. Presidio Dr to I-8 East Ramp	2-Lane Collector	10,000	15,370	F	1.537
Hotel Circle S.					
10. I-8 East Ramp to Bachman Pl	2-Lane Collector (TWLTL)	15,000	12,910	D	0.861
Pacific Highway					
11. SeaWorld Dr to Taylor St	2-Lane Collector (TWLTL)	15,000	22,060	F	1.471
12. Taylor St to Kurtz St	6-Lane Major (Raised Median)	50,000	21,380	B	0.428
13. Kurtz St to Sports Arena Blvd	6-Lane Major (Raised Median)	50,000	56,360	F	1.127
14. Sports Arena Blvd to Barnett Ave	5-Lane Prime Arterial	50,000	58,980	F	1.180
15. Barnett Ave to Witherby St	Expressway	80,000	101,830	F	1.273
16. Witherby St to W. Washington St	Expressway	80,000	104,630	F	1.308
17. W. Washigton St to Sassafras St	6-Lane Prime Arterial	60,000	65,040	F	1.084
18. Sassafras St to W. Laurel St	6-Lane Major (Raised Median)	50,000	25,310	B	0.506
Morena Boulevard					
19. Friars Rd to I-8	4-Lane Major (Raised Median)	40,000	43,760	F	1.094
Linda Vista Road					
20. Morena Blvd to Colusa St	4-Lane Collector (TWLTL)	30,000	29,330	E	0.978
Kurtz Street					
21. Rosecrans St to Pacific Hwy	2-Lane Collector (WP)	8,000	22,880	F	2.860
Sports Arena Blvd					
22. Midway Dr to Kemper St	5-Lane Collector (TWLTL)	37,500	28,750	D	0.767
23. Kemper St to East Dr	5-Lane Major (Raised Median)	45,000	29,370	C	0.653
24. East Dr to Rosecrans St	5-Lane Major (Raised Median)	45,000	28,330	C	0.630
25. Rosecrans St to Enterprise St	2-Lane Collector (WP)	8,000	6,330	D	0.791
Midway Drive					
26. East Dr to Rosecrans St	4-Lane Collector (TWLTL)	30,000	40,650	F	1.355
27. Rosecrans St to Bogley Dr	4-Lane Collector (TWLTL)	30,000	27,310	E	0.910
28. Bogley Dr to Barnett Ave	4-Lane Collector (TWLTL)	30,000	27,140	E	0.905
Lytton Street					
29. Rosecrans St to St. Charles St	4-Lane Collector (TWLTL)	30,000	30,550	F	1.018

(Continued on Next Page)

TABLE 14–2
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
(Continued from Previous Page)					
Barnett Avenue					
30. St. Charles St to Henderson Ave	4-Lane Collector (Raised Median)	30,000	32,780	F	1.093
31. Henderson Ave to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	35,440	F	1.181
Hancock Street					
32. Old Town Ave to Witherby St	2-Lane Collector (WP)	8,000	16,540	F	2.068
33. Witherby St to Noell St	2-Lane Collector (WP)	8,000	6,430	D	0.804
34. Noell St to W. Washington St	2-Lane Collector (WP)	8,000	22,770	F	2.846
W. Washington Street					
35. Admiral Boland Way to Pacific Hwy	2-Lane Collector	8,000	24,690	F	3.086
36. Pacific Hwy to Hancock St	4-Lane Major (Raised Median)	40,000	29,550	C	0.739
37. Hancock St to W. University Ave	4-Lane Major (Raised Median)	40,000	35,290	E	0.882

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.

TABLE 14–3
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5														
1. Sea World to I-8	NB	5 Main + 1 Aux	218,370	6,900	6,860	1,265	1,258	2,160	0.586	0.582	20.6	20.5	C	C
	SB	5 Main + 1 Aux		8,380	9,690	1,536	1,777	2,160	0.711	0.823	25.3	30.8	C	D
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	234,770	7,950	8,480	1,760	1,877	2,133	0.825	0.880	30.7	34.2	D	D
	SB	5 Main		9,040	9,040	2,001	2,001	2,245	0.891	0.891	35.7	35.7	E	E
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	8,030	1,669	1,778	2,130	0.784	0.835	28.7	31.3	D	D
	SB	4 Main + 1 Aux		8,570	8,560	1,897	1,895	2,133	0.889	0.888	34.9	34.8	D	D
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	6,330	1,644	1,752	2,237	0.735	0.783	27.2	29.4	D	D
	SB	4 Main		6,750	6,750	1,868	1,868	2,245	0.832	0.832	32.0	32.0	D	D
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	6,590	1,710	1,824	2,126	0.881	0.815	28.5	31.1	D	D
	SB	4 Main		7,030	7,020	1,946	1,943	2,130	1.000	0.867	34.3	34.1	D	D

(Continued on Next Page)

TABLE 14–3
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
(Continued from Previous Page)														
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	249,820	8,460	9,020	1,873	1,997	2,126	0.881	0.939	34.3	38.9	D	E
	SB	4 Main + 1 Aux		9,620	9,620	2,130	2,130	2,130	1.000	1.000	45.0	45.0	E	E
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	276,450	9,370	9,980	2,075	2,210	2,119	0.979	1.043	42.8	—	E	F
	SB	4 Main + 1 Aux		10,650	10,640	2,358	2,356	2,112	1.116	1.116	—	—	F	F
8. Hawthorn St to 1st Ave	NB	4 Main	229,750	7,780	8,300	2,153	2,297	2,216	0.972	1.037	42.3	—	E	F
	SB	4 Main		8,850	8,840	2,449	2,446	2,220	1.103	1.103	—	—	F	F
9. 1st Ave to 6th Ave	NB	5 Main	313,450	10,620	11,320	2,351	2,506	2,216	1.061	1.131	—	—	F	F
	SB	5 Main		12,080	12,070	2,675	2,672	2,213	1.209	1.207	—	—	F	F
10. 6th Ave to SR-163	NB	5 Main	256,800	8,700	9,270	1,926	2,052	2,216	0.869	0.926	34.6	38.4	D	E
	SB	5 Main		9,890	9,890	2,190	2,190	2,216	0.988	0.988	43.8	43.8	E	E
Interstate 8														
11. W. Mission Bay Dr /Midway Dr to I-5	EB	4 Main	116,880	3,840	3,010	1,050	823	2,248	0.467	0.366	16.9	13.2	B	B
	WB	4 Main		4,880	4,700	1,334	1,285	2,259	0.591	0.569	21.0	20.3	C	C
12. I-5 to	EB	4 Main	140,580	4,110	5,640	1,124	1,542	2,241	0.502	0.688	18.3	25.2	C	C

TABLE 14–3
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Morena Blvd	WB	3 Main		5,800	4,430	2,114	1,615	2,248	0.940	0.718	39.4	26.3	E	D
13. Morena Blvd to Hotel Circle /Taylor St	EB	4 Main + 1 Aux	233,750	6,830	9,370	1,494	2,049	2,126	0.703	0.964	24.7	41.1	C	E
	WB	5 Main		9,650	7,360	2,110	1,609	1,948	1.083	0.826	—	29.3	F	D
(Continued on Next Page)														
(Continued from Previous Page)														
14. Taylor St to Hotel Circle	EB	4 Main	220,190	6,440	8,830	1,760	2,414	2,229	0.790	1.083	29.9	—	D	F
	WB	5 Main		9,090	6,940	1,988	1,518	2,237	0.889	0.679	35.6	24.9	E	C
15. Hotel Circle to SR-163	EB	4 Main	235,450	6,880	9,440	1,879	2,578	2,229	0.843	1.157	32.8	—	D	F
	WB	5 Main		9,720	7,420	2,123	1,621	2,229	0.952	0.727	40.5	27.0	E	D

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. LOS = Level of Service

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. Main = Mainline
2. Aux = Auxiliary
3. Truck factor sourced to most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2016).
4. "—" density exceeds the maximum threshold for LOS F.

TABLE 14–4
YEAR 2050 NO-ACTION ALTERNATIVE INCLUDING AN AUTOMATED PASSENGER MOVER RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. **Moore Street / NB I-5 On-Ramp**							
Year 2050 No-Action Alternative including an APM						2 SOV	
	AM	501	335	166	30	4,150	166
	PM	538	318	220	42	5,500	220

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.

b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).

c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.

d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.

e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane

15.0 Year 2050 with Alternative 4: Higher-density Mixed-use including a Transit Center Analysis

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 conditions with the addition of Alternative 4: Higher-density Mixed-Use Revitalization including a Transit Center traffic. For the purposes of this study, impacts identified under Year 2050 conditions are considered "cumulative" transportation impacts.

15.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center conditions. ***Table 15–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #2 Taylor Street / I-8 EB Ramps – LOS E during the p.m. peak hour**
- **Intersection #6. Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #8. Camino Del Rio W. / Hancock Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #12. Rosecrans Street / Midway Drive – LOS F during the p.m. peak hour**
- **Intersection #13. Rosecrans Street / Lytton Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #15. Midway Drive / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #16. Midway Drive / Barnett Avenue – LOS F during the p.m. peak hour**
- **Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the a.m. and p.m. peak hours**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #22. Old Town Avenue / San Diego Avenue – LOS F during the a.m. and p.m. peak hours**

- **<u>Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #25. Witherby Street / Hancock Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #26. Witherby Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #27. Witherby Street / Tripoli Avenue – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #28. Hancock Street / Noell Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour</u>**
- **<u>Intersection #31. W. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour</u>**
- **<u>Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours</u>**
- **<u>Intersection #36. Pacific Highway / Sea World Drive – LOS F during the a.m. and p.m. peak hours</u>**
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Based on the established significance criteria, **<u>26 significant cumulative impacts</u>** were calculated with the addition of Alternative 4 traffic at the intersections **<u>bolded and underlined</u>** above since the Proposed Action alternative-induced change in delay is greater than 2.0 for LOS E operating intersections and greater than 1.0 second for the LOS F operating intersections.

Appendix R contains the intersection analysis worksheets for the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center scenario.

15.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center conditions. ***Table 15–2*** reports the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center daily street segment operations. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)**
- **Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)**
- **Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)**
- **Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)**
- **Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)**
- **Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)**
- **Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor Street (LOS F)**
- **Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS F)**
- **Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)**
- **Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)**
- **Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)**
- **Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)**
- **Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)**
- **Street Segment #20. Linda Vista Road; Morena Boulevard to Colusa Street (LOS F)**
- **Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)**
- **Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS F)**
- **Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)**
- **Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)**
- **Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)**
- **Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)**
- **Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)**
- **Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)**
- **Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)**
- **Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)

- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- **Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)**

Based on the established significance criteria, **25 significant cumulative impact** were calculated with the addition of Alternative 4 traffic on study area street segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

15.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center conditions. ***Tables 15–3*** and ***15–4*** report the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **<u>Freeway Segment #2. I-5: I-8 to Old Town Avenue, NB/SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)</u>**
- **<u>Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #10. I-5: 6th Avenue to SR-163 NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)</u>**
- **<u>Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)</u>**
- **<u>Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)</u>**
- **<u>Freeway Segment #15. I-8: Hotel Circle to SR-163, EB/WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)</u>**

Based on the established significance criteria, **<u>ten significant cumulative impacts</u>** were calculated with the addition of Alternative 4 traffic on study area freeway segments **<u>bolded and underlined</u>** above since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix S contains the detailed HCS calculations sheets for the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center scenario.

15.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center conditions. ***Table 15–5*** reports the Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center ramp meter operations.

- **Ramp Meter #1. Moore Street/ I-5 NB On-ramp** – Delays of 91/95 minutes and queues of 509/504 vehicles during the a.m. / p.m. peak hours are calculated.at the *Moore Street / NB I-5 On-Ramp* under Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center conditions.

Based on the established significance criteria, **one significant cumulative impact** was calculated with the addition of Alternative 4 traffic at the location **bolded and underlined** above since the total delay at this on ramp is more than 15 minutes during the a.m. and p.m. peak hours and the increase in the delay at the ramp meter is greater than 2.0 minutes.

TABLE 15–1
YEAR 2050 WITH ALTERNATIVE 4
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative incl. APM		Year 2050 With Alternative 4		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM PM	11.6 29.4	B D	14.4 31.1	B D	2.8 1.7	No
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	16.0 29.1	B C	26.7 **72.8**	C **E**	10.7 **43.7**	**Yes**
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	21.5 14.7	C B	39.7 19.2	D B	18.2 4.5	No
4. Taylor St/ Juan St	Signal	AM PM	15.1 34.4	B C	16.5 38.5	B D	1.4 4.1	No
5. Congress St/ Taylor St	Signal	AM PM	12.9 33.4	B C	14.2 43.7	B D	1.3 10.3	No
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM PM	97.1 100.3	F F	**167.7** **223.8**	**F** **F**	**70.6** **123.5**	**Yes**
7. Rosecrans St/ Jefferson St	TWSC [e]	AM PM	43.5 816.6	E F	**49.4** **898.4**	**E** **F**	**5.9** **81.8**	**Yes**
8. Camino Del Rio W/ Hancock St	Signal	AM PM	54.0 142.0	D F	**60.4** **152.3**	**E** **F**	**6.4** **10.3**	**Yes**
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	17.3 50.1	B D	16.0 49.6	B D	-1.3 -0.5	No
10. Rosecrans St/ Kurtz St	Signal	AM PM	15.0 50.8	B D	19.3 50.7	B D	4.3 -0.1	No
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	26.8 73.7	C E	**70.3** **132.7**	**E** **F**	**43.5** **59.0**	**Yes**
12. Rosecrans St/ Midway Dr	Signal	AM PM	37.1 57.3	D E	50.0 **81.7**	D **F**	12.9 **24.4**	**Yes**
13. Rosecrans St/ Lytton St	Signal	AM PM	65.5 61.6	E E	**93.8** **87.2**	**F** **F**	**28.3** **25.6**	**Yes**
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	61.5 108.5	E F	**65.1** **122.9**	**E** **F**	**3.6** **14.4**	**Yes**
15. Midway Dr/ Enterprise St	Signal	AM PM	21.6 22.7	C C	**107.0** **287.0**	**F** **F**	**85.4** **264.3**	**Yes**
16. Barnett Ave/ Midway Dr	Signal	AM PM	9.8 14.4	A B	38.8 **123.7**	D **F**	29.0 **109.3**	**Yes**

(Continued on Next Page)

TABLE 15–1
YEAR 2050 WITH ALTERNATIVE 4
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative incl. APM		Year 2050 With Alternative 4		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.7 12.8	B B	10.4 15.1	B B	-2.3 2.3	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	198.8 352.0	F F	**1,157.8** **1,676.4**	**F** **F**	**959.0** **1,324.4**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	21.4 616.3	C F	**552.6** **3,016.3**	**F** **F**	**531.2** **2,400.0**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	208.9 279.8	F F	**582.9** **626.3**	**F** **F**	**374.0** **346.5**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E	**161.9** **84.8**	**F** **F**	**19.8** **19.1**	**Yes**
23. Old Town Ave/ Moore St	Signal	AM PM	1,041.2 199.1	F F	**3,402.9** **492.3**	**F** **F**	**2,361.7** **293.2**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	154.4 112.4	F F	**516.5** **551.4**	**F** **F**	**362.1** **439.0**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	154.7 95.1	F F	**464.8** **606.1**	**F** **F**	**310.1** **511.0**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	136.4 163.1	E F	**335.6** **729.1**	**F** **F**	**199.2** **566.0**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.8 35.1	B E	**189.3** **423.0**	**F** **F**	**178.5** **387.9**	**Yes**
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F	**51.3** **142.8**	**F** **F**	**12.4** **21.1**	**Yes**
29. Washington St/ San Diego Ave	Signal	AM PM	28.7 16.8	C B	28.8 16.9	C B	0.1 0.1	No
30. Washington St/ Hancock St	Signal	AM PM	25.2 62.4	C E	25.3 **79.3**	C **E**	0.1 **16.9**	**Yes**
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.8 128.2	C F	27.9 **133.4**	C **F**	0.1 **5.2**	**Yes**
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.4	B C	15.3 33.9	B C	0.1 4.5	No
(Continued on Next Page)								

TABLE 15–1
YEAR 2050 WITH ALTERNATIVE 4
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative incl. APM		Year 2050 With Alternative 4		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM	239.3	F	**245.6**	**F**	**6.3**	**Yes**
		PM	130.4	F	**146.9**	**F**	**16.5**	
34. Pacific Hwy / Laurel St	Signal	AM	152.8	F	**163.4**	**F**	**10.6**	**Yes**
		PM	172.8	F	**177.7**	**F**	**4.9**	
35. Harbor Dr / Laurel St	Signal	AM	125.6	F	**128.5**	**F**	**2.9**	**Yes**
		PM	115.5	F	**124.8**	**F**	**9.3**	
36. Pacific Hwy / Sea World Dr	Signal	AM	34.0	C	**131.4**	**F**	**97.4**	**Yes**
		PM	90.7	F	**168.5**	**F**	**77.8**	
37. Sea World Dr / I-5 SB Ramps	Signal	AM	35.5	D	35.6	D	0.1	No
		PM	20.9	C	21.0	C	0.1	
38. Sea World Dr / I-5 NB Ramps	Signal	AM	51.7	D	51.8	D	0.1	No
		PM	82.1	F	82.2	F	0.1	
39. Morena Blvd / Linda Vista Rd	Signal	AM	17.1	B	18.1	B	1.0	No
		PM	24.3	C	27.7	C	3.4	

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:
1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 15–2
YEAR 2050 WITH ALTERNATIVE 4
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative incl. APM			Year 2050 With Alternative 4			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	57,900	F	1.544	**61,440**	**F**	**1.638**	**0.094**	**3,540**	**Yes**
2. Lytton St to Midway Dr	50,000	53,030	F	1.061	**56,550**	**F**	**1.131**	**0.070**	**3,520**	**Yes**
3. Midway Dr to Sports Arena Blvd	50,000	62,810	F	1.256	**72,630**	**F**	**1.453**	**0.197**	**9,820**	**Yes**
4. Sports Arena Blvd to Kurtz St	30,000	33,580	F	1.119	**40,600**	**F**	**1.353**	**0.234**	**7,020**	**Yes**
5. E: Kurtz St to Pacific Hwy	30,000	28,520	E	0.951	**29,930**	**E**	**0.998**	**0.047**	**1,410**	**Yes**
Taylor Street										
6. Pacific Hwy to Congress St	45,000	19,530	B	0.434	26,550	C	0.590	0.156	7,020	No
7. Congress St to Juan St	45,000	18,170	B	0.404	25,190	C	0.560	0.156	7,020	No
8. Juan St to Presidio Dr	40,000	20,800	B	0.520	27,120	C	0.678	0.158	6,320	No
9. Presidio Dr to I-8 East Ramp	10,000	15,370	F	1.537	**19,590**	**F**	**1.959**	**0.422**	**4,220**	**Yes**
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	12,910	D	0.861	12,910	D	0.861	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	22,060	F	1.471	**29,080**	**F**	**1.939**	**0.468**	**7,020**	**Yes**
12. Taylor St to Kurtz St	50,000	21,380	B	0.428	31,490	C	0.630	0.202	10,110	No
13. Kurtz St to Sports Arena Blvd	50,000	56,360	F	1.127	**101,420**	**F**	**2.028**	**0.901**	**45,060**	**Yes**
14. Sports Arena Blvd to Barnett Ave	50,000	58,980	F	1.180	**85,910**	**F**	**1.718**	**0.538**	**26,930**	**Yes**
15. Barnett Ave to Witherby St	80,000	101,830	F	1.273	**142,760**	**F**	**1.785**	**0.512**	**40,930**	**Yes**
16. Witherby St to W. Washington St	80,000	104,630	F	1.308	**129,370**	**F**	**1.617**	**0.309**	**24,740**	**Yes**
17. W. Washigton St to Sassafras St	60,000	65,040	F	1.084	**86,190**	**F**	**1.437**	**0.353**	**21,150**	**Yes**
18. Sassafras St to W. Laurel St	50,000	25,310	B	0.506	28,180	C	0.564	0.058	2,870	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	43,760	F	1.094	**45,860**	**F**	**1.147**	**0.053**	**2,100**	**Yes**
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	29,330	E	0.978	**30,730**	**F**	**1.024**	**0.046**	**1,400**	**Yes**
Kurtz Street										
21. Rosecrans St to Pacific Hwy	8,000	22,880	F	2.860	**28,520**	**F**	**3.565**	**0.705**	**5,640**	**Yes**
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	28,750	D	0.767	30,850	D	0.823	0.056	2,100	No
23. Kemper St to East Dr	45,000	29,370	C	0.653	32,170	C	0.715	0.062	2,800	No
24. East Dr to Rosecrans St	45,000	28,330	C	0.630	31,830	C	0.707	0.077	3,500	No
25. Rosecrans St to Enterprise St	8,000	6,330	D	0.791	**8,430**	**F**	**1.054**	**0.263**	**2,100**	**Yes**
Midway Drive										
26. East Dr to Rosecrans St	30,000	40,650	F	1.355	**42,050**	**F**	**1.402**	**0.047**	**1,400**	**Yes**
27. Rosecrans St to Bogley Dr	30,000	27,310	E	0.910	**33,610**	**F**	**1.120**	**0.210**	**6,300**	**Yes**
28. Bogley Dr to Barnett Ave	30,000	27,140	E	0.905	**45,350**	**F**	**1.512**	**0.607**	**18,210**	**Yes**
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	30,550	F	1.018	**33,370**	**F**	**1.112**	**0.094**	**2,820**	**Yes**

(Continued on Next Page)

TABLE 15–2
YEAR 2050 WITH ALTERNATIVE 4
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative incl. APM			Year 2050 With Alternative 4			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	32,780	F	1.093	**35,600**	**F**	**1.187**	**0.094**	**2,820**	**Yes**
31. Henderson Ave to Pacific Hwy	30,000	35,440	F	1.181	**54,370**	**F**	**1.812**	**0.631**	**18,930**	**Yes**
Hancock Street										
32. Old Town Ave to Witherby St	8,000	16,540	F	2.068	**32,030**	**F**	**4.004**	**1.936**	**15,490**	**Yes**
33. Witherby St to Noell St	8,000	6,430	D	0.804	**7,130**	**E**	**0.891**	**0.087**	**700**	**Yes**
34. Noell St to W. Washington St	8,000	22,770	F	2.846	22,770	F	2.846	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	24,690	F	3.086	24,690	F	3.086	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	29,550	C	0.739	33,070	D	0.827	0.088	3,520	No
37. Hancock St to W. University Ave	40,000	35,290	E	0.882	**38,810**	**E**	**0.970**	**0.088**	**3,520**	**Yes**

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 15–3
YEAR 2050 WITH ALTERNATIVE 4
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 4: Higher-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	218,370	6,900	1,265	2,160	0.586	20.6	C	226,840	7,292	1,337	2,160	0.619	21.7	C	0.033	No
	SB	5 Main + 1 Aux		8,380	1,536	2,160	0.711	25.3	C		8,611	1,579	2,160	0.731	26.1	D	0.020	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	234,770	7,950	1,760	2,133	0.825	30.7	D	249,560	**8,636**	**1,912**	**2,133**	**0.896**	**35.4**	**E**	**0.071**	**Yes**
	SB	5 Main		9,040	2,001	2,245	0.891	35.7	E		**9,442**	**2,090**	**2,245**	**0.931**	**38.7**	**E**	**0.040**	**Yes**
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	1,669	2,130	0.784	28.7	D	222,480	7,540	1,669	2,130	0.784	28.7	D	0.000	No
	SB	4 Main + 1 Aux		8,570	1,897	2,133	0.889	34.9	D		8,570	1,897	2,133	0.889	34.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	1,644	2,237	0.735	27.2	D	175,330	5,940	1,644	2,237	0.735	27.2	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	1,710	2,237	0.764	28.5	D	182,450	6,180	1,710	2,237	0.764	28.5	D	0.000	No
	SB	4 Main		7,030	1,946	2,241	0.868	34.3	D		7,030	1,946	2,241	0.868	34.3	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	249,820	8,460	1,873	2,126	0.881	34.3	D	267,470	**8,940**	**1,979**	**2,126**	**0.931**	**38.2**	**E**	**0.050**	**Yes**
	SB	4 Main + 1 Aux		9,620	2,130	2,130	1.000	45.0	E		**10,437**	**2,311**	**2,130**	**1.085**	**—**	**F**	**0.085**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	276,450	9,370	2,075	2,119	0.979	42.8	E	294,100	**9,850**	**2,181**	**2,119**	**1.029**	**—**	**F**	**0.050**	**Yes**
	SB	4 Main + 1 Aux		10,650	2,358	2,112	1.116	—	F		**11,467**	**2,539**	**2,112**	**1.202**	**—**	**F**	**0.086**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	229,750	7,780	2,153	2,216	0.972	42.3	E	247,400	**8,260**	**2,286**	**2,216**	**1.032**	**—**	**F**	**0.060**	**Yes**
	SB	4 Main		8,850	2,449	2,220	1.103	—	F		**9,667**	**2,675**	**2,220**	**1.205**	**—**	**F**	**0.102**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	313,450	10,620	2,351	2,216	1.061	—	F	329,700	**11,062**	**2,449**	**2,216**	**1.105**	**—**	**F**	**0.044**	**Yes**
	SB	5 Main		12,080	2,675	2,213	1.209	—	F		**12,832**	**2,841**	**2,213**	**1.284**	**—**	**F**	**0.075**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	256,800	8,700	1,926	2,216	0.869	34.6	D	271,640	**9,104**	**2,016**	**2,216**	**0.910**	**37.3**	**E**	**0.041**	**Yes**
	SB	5 Main		9,890	2,190	2,216	0.988	43.8	E		**10,577**	**2,342**	**2,216**	**1.057**	**—**	**F**	**0.069**	**Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,840	1,050	2,248	0.467	16.9	B	118,980	3,897	1,065	2,248	0.474	17.1	B	0.007	No
	WB	4 Main		4,880	1,334	2,259	0.591	21.0	C		4,978	1,361	2,259	0.602	21.5	C	0.011	No
12. I-5 to Morena Blvd	EB	4 Main	140,580	4,110	1,124	2,241	0.502	18.3	C	149,020	4,502	1,230	2,241	0.549	20.0	C	0.047	No
	WB	3 Main		5,800	2,114	2,248	0.940	39.4	E		**6,030**	**2,198**	**2,248**	**0.978**	**42.8**	**E**	**0.038**	**Yes**

(Continued on Next Page)

TABLE 15–3
YEAR 2050 WITH ALTERNATIVE 4
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 4: Higher-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	233,750	6,830	1,494	2,126	0.703	24.7	C	242,190	7,222	1,579	2,126	0.743	26.5	D	0.040	No
	WB	5 Main		9,650	2,110	1,948	1.083	—	F		**9,880**	**2,160**	**1,948**	**1.109**	**—**	**F**	**0.026**	**Yes**
14. Taylor St to Hotel Circle	EB	4 Main	220,190	6,440	1,760	2,229	0.790	29.9	D	232,850	7,027	1,921	2,229	0.862	33.9	D	0.072	No
	WB	5 Main		9,090	1,988	2,237	0.889	35.6	E		**9,435**	**2,063**	**2,237**	**0.922**	**38.1**	**E**	**0.033**	**Yes**
15. Hotel Circle to SR-163	EB	4 Main	235,450	6,880	1,879	2,229	0.843	32.8	D	248,110	**7,467**	**2,039**	**2,229**	**0.915**	**37.5**	**E**	**0.072**	**Yes**
	WB	5 Main		9,720	2,123	2,229	0.952	40.5	E		**10,065**	**2,199**	**2,229**	**0.987**	**43.6**	**E**	**0.035**	**Yes**

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 15–4
YEAR 2050 WITH ALTERNATIVE 4
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 4: Higher-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB SB	5 Main + 1 Aux 5 Main + 1 Aux	218,370	6,860 9,690	1,258 1,777	2,160 2,160	0.582 0.823	20.50 30.80	C D	226,840	7,185 10,146	1,317 1,860	2,160 2,160	0.610 0.861	21.40 33.20	C D	0.028 0.038	No No
2. I-8 to Old Town Ave	NB SB	4 Main + 1 Aux 5 Main	234,770	8,480 9,040	1,877 2,001	2,133 2,245	0.880 0.891	34.20 35.70	D E	249,560	**9,047** **9,837**	**2,003** **2,178**	**2,133** **2,245**	**0.939** **0.970**	**38.90** **42.00**	**E** **E**	**0.059** **0.079**	**Yes** **Yes**
3. Old Town Ave to Washington St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.30 34.80	D D	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.30 34.80	D D	0.000 0.000	No No
4. Washington St to Sassafras St	NB SB	4 Main 4 Main	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.40 32.00	D D	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.40 32.00	D D	0.000 0.000	No No
5. Sassafras St to Pacific Hwy Viaduct	NB SB	4 Main 4 Main	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.10 34.10	D D	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.10 34.10	D D	0.000 0.000	No No
6. Pacific Hwy Viaduct to Laurel St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	249,820	9,020 9,620	1,997 2,130	2,126 2,130	0.939 1.000	38.90 45.00	E E	267,470	**9,970** **10,296**	**2,207** **2,280**	**2,126** **2,130**	**1.038** **1.070**	— —	**F** **F**	**0.099** **0.070**	**Yes** **Yes**
7. Laurel St to Hawthorn St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	276,450	9,980 10,640	2,210 2,356	2,119 2,112	1.043 1.116	— —	F F	294,100	**10,930** **11,316**	**2,420** **2,505**	**2,119** **2,112**	**1.142** **1.186**	— —	**F** **F**	**0.099** **0.070**	**Yes** **Yes**
8. Hawthorn St to 1st Ave	NB SB	4 Main 4 Main	229,750	8,300 8,840	2,297 2,446	2,216 2,220	1.037 1.102	— —	F F	247,400	**9,250** **9,516**	**2,560** **2,634**	**2,216** **2,220**	**1.155** **1.186**	— —	**F** **F**	**0.118** **0.084**	**Yes** **Yes**
9. 1st Ave to 6th Ave	NB SB	5 Main 5 Main	313,450	11,320 12,070	2,506 2,672	2,216 2,213	1.131 1.207	— —	F F	329,700	**12,195** **12,692**	**2,700** **2,810**	**2,216** **2,213**	**1.218** **1.270**	— —	**F** **F**	**0.087** **0.063**	**Yes** **Yes**
10. 6th Ave to SR-163	NB SB	5 Main 5 Main	256,800	9,270 9,890	2,052 2,190	2,216 2,216	0.926 0.988	38.4 43.8	E E	271,640	**10,069** **10,459**	**2,229** **2,316**	**2,216** **2,216**	**1.006** **1.045**	— —	**F** **F**	**0.080** **0.057**	**Yes** **Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB WB	4 Main 4 Main	116,880	3,010 4,700	823 1,285	2,248 2,259	0.366 0.569	13.20 20.30	B C	118,980	3,124 4,781	854 1,307	2,248 2,259	0.380 0.579	13.70 20.60	B C	0.014 0.010	No No
12. I-5 to Morena Blvd	EB WB	4 Main 3 Main	140,580	5,640 4,430	1,542 1,615	2,241 2,248	0.688 0.718	25.20 26.30	C D	149,020	5,964 4,885	1,630 1,780	2,241 2,248	0.727 0.792	26.80 29.70	D D	0.039 0.074	No No

(Continued on Next Page)

Table 15–4
Year 2050 with Alternative 4
Freeway Segment Operations – PM Peak Hour

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 4: Higher-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	233,750	9,370	2,049	2,126	0.964	41.10	E	242,190	**9,694**	**2,120**	**2,126**	**0.997**	**44.60**	**E**	**0.033**	**Yes**
	WB	5 Main		7,360	1,609	1,948	0.826	29.30	D		7,815	1,709	1,948	0.877	32.80	D	0.051	No
14. Taylor St to Hotel Circle	EB	4 Main	220,190	8,830	2,414	2,229	1.083	—	F	232,850	**9,316**	**2,546**	**2,229**	**1.142**	**—**	**F**	**0.059**	**Yes**
	WB	5 Main		6,940	1,518	2,237	0.679	24.90	C		7,623	1,667	2,237	0.745	27.60	D	0.066	No
15. Hotel Circle to SR-163	EB	4 Main	235,450	9,440	2,578	2,229	1.157	-	F	248,110	**9,926**	**2,710**	**2,229**	**1.216**	**—**	**F**	**0.059**	**Yes**
	WB	5 Main		7,420	1,621	2,229	0.727	27.0	D		8,103	1,770	2,229	0.794	30.2	D	0.067	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative including an APM							2 SOV
	AM	501	335	166	30	4,150	166
	PM	538	318	220	42	5,500	220
Year 2050 with Alternative 4							2 SOV
	AM	844	335	509	91	12,725	509
	PM	822	318	504	95	12,588	504
Δ	**AM**			**343**	**61**	**8,575**	**343**
	PM			**284**	**53**	**7,088**	**284**

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.
3. **Bold** typeface and shading represent a significant impact.

15.5 Significant Impacts and Mitigation Measures

Alternative 4 results in similar significant cumulative impacts as Alternatives 2 and 3. Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center would have significant cumulative impacts at **26** intersections, **25** impacts on street segments, **10** impacts on freeway segments, and **one (1)** impact to ramp meters.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange that would improve access to the OTC Site as well as reduce area traffic on local streets. This network improvement is proposed as mitigation for several impacted locations. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (only under the Alternative 4 and Alternative 5 scenarios where the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. A concept plan showing this improvement is depicted later on in *Section 29.0* of this report.

For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints and where the reconstructed interchange would not fully mitigate, it is recommended that the Proposed Action alternative contribute to the implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 15–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 15–1 shows an illustration of the significantly impacted locations.

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Alt 4-I-1	2	Taylor St/ I-8 EB Ramps	San Diego/ Caltrans	Per the Mission Valley Community Plan, the entirety of Hotel Circle will be transformed from a bi-directional collector to a one-way couplet running in the clockwise direction. As part of this network change, the Taylor Street/I-8 Eastbound Ramps interchange will be eliminated and replaced by a new signalized interchange at I-8 with the future connection of Via Las Cumbres. Given the unknown timing for implementation and the lack of an identified funding source in the Mission Valley Community Plan, the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-2	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5

YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-3	7	Rosecrans St/ Jefferson St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/ Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic is observed would not be beneficial to the major street traffic flow. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-4	8	Camino Del Rio W/ Hancock St	San Diego	The intersection is built out with regard to available right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-5	11	Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-6	12	Rosecrans St/ Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action alternative, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-7	13	Rosecrans St/ Lytton St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-8	14	Truxtun Rd/ Lytton St/ Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.	Yes
Alt 4-I-9	15	Midway Dr/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/ Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-10	16	Barnett Ave/ Midway Dr	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Enterprise Street intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the southbound right-turning and eastbound left-turning movements is substantial. Those additional trips result in a significant delay at this intersection. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Enterprise Street, reconstructing this intersection in combination with the Midway Drive/ Enterprise Street intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-11	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-12	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 4-I-13	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-14	22	Old Town Ave/ San Diego Ave	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Extra lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-15	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Moore Street intersection that effectively operates as the I-5 North interchange with Old Town Avenue. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-I-16	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Hancock Street intersection that effectively operates as the I-5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5

YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-17	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-I-18	26	Witherby St/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-19	27	Tripoli Ave/ Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-I-20	28	Noell St/ Hancock St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.	Yes
Alt 4-I-21	30	Washington St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and concluded impacts to this intersection would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-22	31	Washington St/ Pacific Hwy (N)	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends participation by the airport in regional efforts to develop a long-range transportation solution for accessing the airport, including: 1) participate in regional planning efforts led by SANDAG to determine transit connections between regional transit and the airport terminals, freeway connections along the Laurel Street corridor, intelligent transportation systems, and mobility hub improvements/strategies; and 2) participate in the implementation of improvements and strategies identified in the Airport Connectivity Analysis. However, the improvements were considered infeasible because parts of the mitigation measures are within the control of other agencies or jurisdictions. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-I-23	33	Pacific Hwy/ Sassafras St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-I-24	34	Pacific Hwy / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-25	35	Harbor Dr / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-I-26	36	Pacific Hwy / Sea World Dr	San Diego	There are no planned improvements in the Mission Bay Park Master Plan at this intersection. In order to improve operations at this intersection, the Proposed Action alternative should construct an additional southbound left-turn lane from SeaWorld Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
STREET SEGMENTS					
		Rosecrans Street			
Alt 4-S-1	1	Dewey Rd to Lytton St	San Diego	Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-2	2	Lytton St to Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-3	3	Midway Dr to Sports Arena Blvd	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-4	4	Sports Arena Blvd to Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-5	5	E: Kurtz St to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a s four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Taylor Street			
Alt 4-S-6	9	Presidio Dr to I-8 East Ramp	San Diego	There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town Community, the Community Plan does not propose any road widenings or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Pacific Highway			
Alt 4-S-7	11	SeaWorld Dr to Taylor St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-8	13	Kurtz St to Sports Arena Blvd	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-9	14	Sports Arena Blvd to Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 4-S-10	15	Barnett Ave to Witherby St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-11	16	Witherby St to W. Washington St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-12	17	W. Washington St to Sassafras St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Morena Boulevard			
Alt 4-S-13	19	Friars Rd to I-8	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Linda Vista Road			

TABLE 15–5

YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-14	20	Morena Blvd to Colusa St	San Diego	Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Kurtz Street			
Alt 4-S-15	21	Rosecrans to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Sports Arena Blvd			
Alt 4-S-16	25	Rosecrans St to Enterprise St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Midway Drive			
Alt 4-S-17	26	East Dr to Rosecrans St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-18	27	Rosecrans St to Bogley Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-19	28	Bogley Dr to Barnett Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports LOS C results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact on this street segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Lytton Street			
Alt 4-S-20	29	Rosecrans St to St. Charles St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
		Barnett Avenue			
Alt 4-S-21	30	St. Charles St to Henderson Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 4-S-22	31	Henderson Ave to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Hancock Street			
Alt 4-S-23	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-S-24	33	Witherby St to Noell St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
		W. Washington Street			
Alt 4-S-25	37	Hancock St to W. University Ave	San Diego	There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
FREEWAYS					
Alt 4-F-1	2	I-5: I-8 to Old Town Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-F-2	6	I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 4-F-3	7	I-5: Laurel St to Hawthorn St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 4-F-4	8	I-5: Hawthorn St to 1st Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 4-F-5	9	I-5: 1st Ave to 6th Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 15–5

YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-F-6	10	I-5: 6th Ave to SR-163	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 4-F-7	12	I-8: I-5 to Morena Blvd	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 15–5
YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-F-8	13	I-8: Morena Blvd to Hotel Circle/Taylor Street	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 4-F-9	14	I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

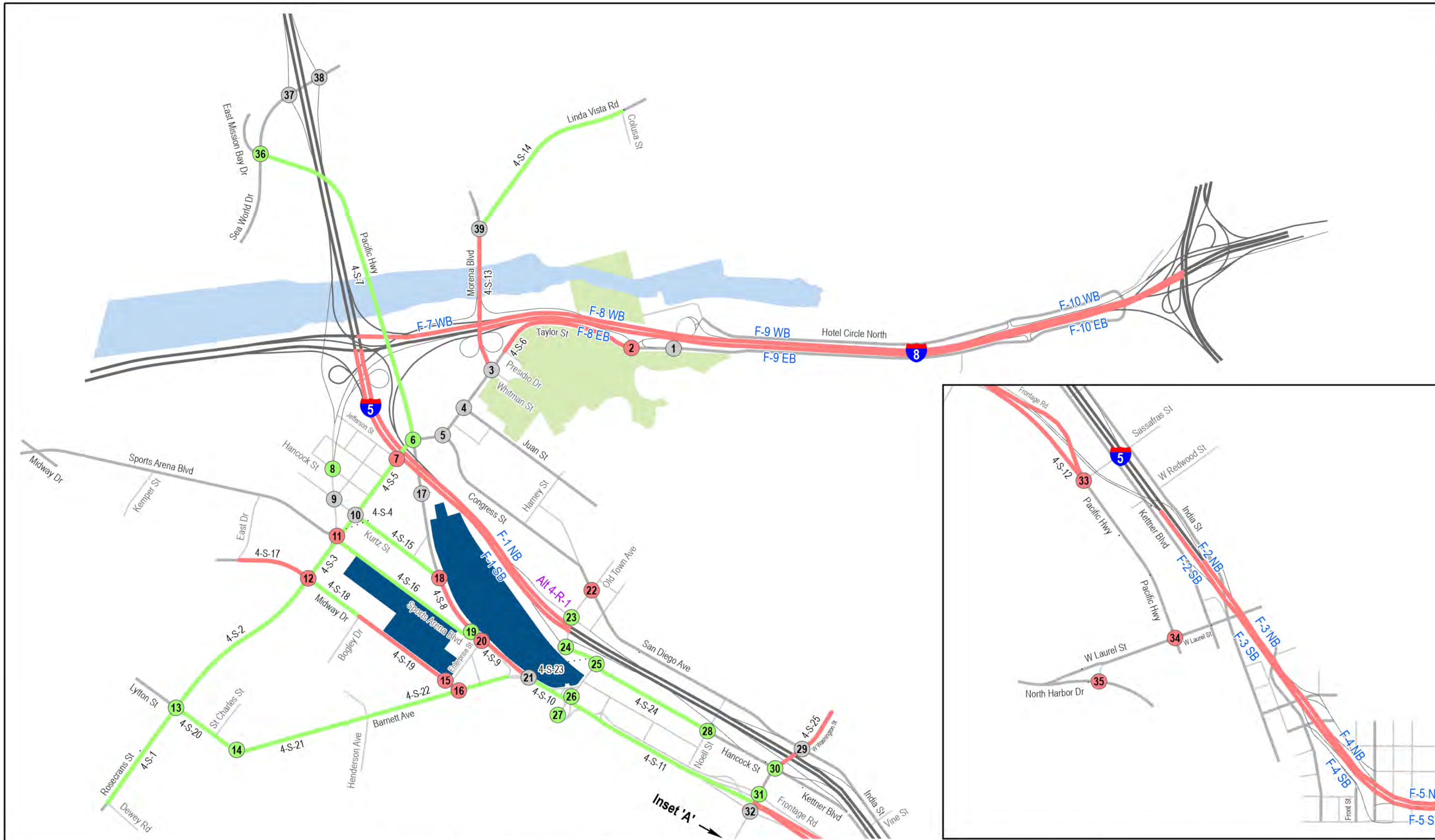
TABLE 15–5

YEAR 2050 WITH ALTERNATIVE 4 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 4-F-10	15	I-8: Hotel Circle to SR-163	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
RAMP METER					
Alt 4-R-1	1	Moore St/I-5 NB On-Ramp	Caltrans	Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to I-5 northbound. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?



IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
2	Alt 4-I-1	22	Alt 4-I-14
6	Alt 4-I-2	23	Alt 4-I-15
7	Alt 4-I-3	24	Alt 4-I-16
8	Alt 4-I-4	25	Alt 4-I-17
11	Alt 4-I-5	26	Alt 4-I-18
12	Alt 4-I-6	27	Alt 4-I-19
13	Alt 4-I-7	28	Alt 4-I-20
14	Alt 4-I-8	30	Alt 4-I-21
15	Alt 4-I-9	31	Alt 4-I-22
16	Alt 4-I-10	33	Alt 4-I-23
18	Alt 4-I-11	34	Alt 4-I-24
19	Alt 4-I-12	35	Alt 4-I-25
20	Alt 4-I-13	36	Alt 4-I-26

Figure 15–1 Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center Impact Summary

Study Intersection
Project Site
Parks
Wetlands
Impact Mitigated
Impact Unmitigated
Alt X-S-X Street Segment Impact ID
Alt X-S-X Freeway Segment Impact ID
Alt X-S-X Freeway Ramp Impact ID

0 0.35 0.7 Miles

16.0 YEAR 2050 WITH ALTERNATIVE 5: LOWER-DENSITY MIXED-USE REVITALIZATION INCLUDING A TRANSIT CENTER ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Year 2050 conditions with the addition of Alternative 5: Lower-density Mixed-Use Revitalization including a Transit Center traffic. No changes to the street network over existing conditions were assumed in the analysis. For the purposes of this study, impacts identified under Year 2050 conditions are considered "cumulative" transportation impacts.

16.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center conditions. ***Table 16–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #2. Taylor Street / I-8 EB Ramps – LOS E during the p.m. peak hour**
- **Intersection #6. Rosecrans Street & Taylor Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #7. Rosecrans Street / Jefferson Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #8. Camino Del Rio W. / Hancock Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #11. Rosecrans Street / Sports Arena Boulevard – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #12. Rosecrans Street / Midway Drive – LOS E during the p.m. peak hour**
- **Intersection #13. Rosecrans Street / Lytton Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #15. Midway Drive / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #16. Midway Drive / Barnett Avenue – LOS E during the p.m. peak hour**
- **Intersection #18. Pacific Highway / Kurtz Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the a.m. and p.m. peak hours**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**

- **Intersection #22. Old Town Avenue / San Diego Avenue – LOS F/E during the a.m./p.m. peak hours**
- **Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #24. Old Town Avenue / Hancock Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #25. Witherby Street / Hancock Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #26. Witherby Street / Pacific Highway – LOS F during the a.m. and p.m. peak hours**
- **Intersection #27. Witherby Street / Tripoli Avenue – LOS F during the a.m. and p.m. peak hours**
- **Intersection #28. Hancock Street / Noell Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #30. W. Washington Street / Hancock Street – LOS E during the p.m. peak hour**
- **Intersection #31. W. Washington Street / Pacific Highway (N) – LOS F during the p.m. peak hour**
- **Intersection #33. Pacific Highway / Sassafras Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #34. Pacific Highway / Laurel Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #35. Harbor Drive / Laurel Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #36. Pacific Highway / Sea World Drive – LOS F during the a.m. and p.m. peak hours**
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS F during the p.m. peak hour

Based on the established significance criteria, **26 significant cumulative impacts** were calculated with the addition of Alternative 5 traffic at the intersections **bolded and underlined** above since the Proposed Action alternative-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 second for LOS F operating intersections.

Appendix T contains the intersection analysis worksheets for the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center scenario.

16.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center conditions. ***Table 16–2*** reports the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center daily street segment operations. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)**
- **Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)**
- **Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)**
- **Street Segment #4. Rosecrans Street: Sports Arena Boulevard to Kurtz Street (LOS F)**
- **Street Segment #5. Rosecrans Street: Kurtz Street to Pacific Highway (LOS E)**
- **Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)**
- **Street Segment #11. Pacific Highway: SeaWorld Drive to Taylor Street (LOS F)**
- **Street Segment #13. Pacific Highway: Kurtz Street to Sports Arena Boulevard (LOS F)**
- **Street Segment #14. Pacific Highway: Sports Arena Boulevard to Barnett Avenue (LOS F)**
- **Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)**
- **Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS F)**
- **Street Segment #17. Pacific Highway: W. Washington Street to Sassafras Street (LOS F)**
- **Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)**
- **Street Segment #20. Linda Vista Road: Morena Bouelvard to Colusa Street (LOS F)**
- **Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)**
- **Street Segment #25. Sports Arena Boulevard: Rosecrans Street to Enterprise Street (LOS E)**
- **Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)**
- **Street Segment #27. Midway Drive: Rosecrans Street to Bogley Drive (LOS F)**
- **Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS F)**
- **Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS F)**
- **Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)**
- **Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)**
- **Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)**
- **Street Segment #33. Hancock Street: Witherby Street Noell Street (LOS E)**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)

- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)
- **Street Segment #37. W. Washington Street: Hancock Street to W. University Avenue (LOS E)**

Based on the established significance criteria, **25 significant cumulative impact** were calculated with the addition of Alternative 5 traffic on study area street segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

16.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center conditions. ***Tables 16–3*** and ***16–4*** report the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F:

- **Freeway Segment #2. I-5: I-8 to Old Town Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)**
- **Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, NB/SB (LOS F – a.m. peak) and NB/SB (LOS F – p.m. peak)**
- **Freeway Segment #10. I-5: 6th Avenue to SR-163 NB/SB (LOS E/F – a.m. peak) and NB/SB (LOS E/F – p.m. peak)Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)**
- **Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS F – a.m. peak) and EB (LOS E – p.m. peak)**
- **Freeway Segment #14. I-8: Taylor Street to Hotel Circle, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**
- **Freeway Segment #15. I-8: Hotel Circle to SR-163, EB/WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**

Based on the established significance criteria, **ten significant cumulative impacts** were calculated with the addition of Alternative 5 traffic on study area freeway segments **bolded and underlined** above since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix U contains the detailed HCS calculations sheets for the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center scenario.

16.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center conditions. ***Table 16–4*** reports the Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center ramp meter operations.

- **Ramp Meter #1. Moore Street/ I-5 NB On-ramp** – Delays of 79/82 minutes and queues of 442/435 vehicles during the a.m. / p.m. peak hours are calculated.at the *Moore Street / NB I-5 On-Ramp* under Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center conditions.

Based on the established significance criteria, **one (1) significant cumulative impact** was calculated with the addition of Alternative 5 traffic at the location **bolded and underlined** above since the total delay at this on ramp is more than 15 minutes during the a.m. and p.m. peak hours and the increase in the delay at the ramp meter is greater than 2.0 minutes.

TABLE 16–1
YEAR 2050 WITH ALTERNATIVE 5
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM		Year 2050 With Alternative 5		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM PM	11.6 29.4	B D	13.4 30.2	B D	1.8 0.8	No
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	16.0 29.1	B C	23.4 **60.3**	C **E**	7.4 **31.2**	**Yes**
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	21.5 14.7	C B	33.8 18.1	C B	12.3 3.4	No
4. Taylor St/ Juan St	Signal	AM PM	15.1 34.4	B C	16.1 47.1	B D	1.0 12.7	No
5. Congress St/ Taylor St	Signal	AM PM	12.9 33.4	B C	13.8 39.3	B D	0.9 5.9	No
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM PM	97.1 100.3	F F	**146.0** **190.8**	**F** **F**	**48.9** **90.5**	**Yes**
7. Rosecrans St/ Jefferson St	TWSC [e]	AM PM	43.5 816.6	E F	**48.4** **881.2**	**E** **F**	**4.9** **64.6**	**Yes**
8. Camino Del Rio W/ Hancock St	Signal	AM PM	54.0 142.0	D F	**58.5** **150.3**	**E** **F**	**4.5** **8.3**	**Yes**
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	17.3 50.1	B D	16.3 49.6	B D	-1.0 -0.5	No
10. Rosecrans St/ Kurtz St	Signal	AM PM	15.0 50.8	B D	17.9 50.1	B D	2.9 -0.7	No
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	26.8 73.7	C E	**62.0** **116.9**	**E** **F**	**35.2** **43.2**	**Yes**
12. Rosecrans St/ Midway Dr	Signal	AM PM	37.1 57.3	D E	52.4 **73.0**	D **E**	15.3 **15.7**	**Yes**
13. Rosecrans St/ Lytton St	Signal	AM PM	65.5 61.6	E E	**87.1** **81.9**	**F** **F**	**21.6** **20.3**	**Yes**
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	61.5 108.5	E F	**63.5** **119.5**	**E** **F**	**2.0** **11.0**	**Yes**
15. Midway Dr/ Enterprise St	Signal	AM PM	21.6 22.7	C C	**65.0** **179.7**	**F** **F**	**43.4** **157.0**	**Yes**
16. Barnett Ave/ Midway Dr	Signal	AM PM	9.8 11.6	A B	29.3 **85.7**	C **F**	19.5 **71.3**	**Yes**

(Continued on Next Page)

TABLE 16–1
YEAR 2050 WITH ALTERNATIVE 5
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM		Year 2050 With Alternative 5		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	12.7 12.8	B B	9.9 13.2	A B	-2.8 0.4	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	198.8 352.0	F F	**889.9** **1,233.4**	**F** **F**	**691.1** **881.4**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	21.4 616.3	C F	**307.2** **2,155.5**	**F** **F**	**285.8** **1,539.2**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	208.9 279.8	F F	**495.9** **535.6**	**F** **F**	**287.0** **255.8**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	142.1 65.7	F E	**157.3** **79.8**	**F** **E**	**15.2** **14.1**	**Yes**
23. Old Town Ave/ Moore St	Signal	AM PM	1,041.2 199.1	F F	**2,981.5** **407.5**	**F** **F**	**1,940.3** **208.4**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	154.4 112.4	F F	**423.9** **436.3**	**F** **F**	**269.5** **323.9**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	154.7 95.1	F F	**357.9** **470.1**	**F** **F**	**203.2** **375.0**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	136.4 163.1	E F	**246.5** **592.1**	**F** **F**	**110.1** **429.0**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	10.8 35.1	B E	**108.1** **305.1**	**F** **F**	**97.3** **270.0**	**Yes**
28. Noell St/ Hancock St	AWSC	AM PM	38.9 121.7	E F	**48.1** **138.2**	**E** **F**	**9.2** **16.5**	**Yes**
29. Washington St/ San Diego Ave	Signal	AM PM	28.7 16.8	C B	28.8 16.9	C B	0.1 0.1	No
30. Washington St/ Hancock St	Signal	AM PM	25.2 62.4	C E	25.3 **74.9**	C **E**	0.1 **12.5**	**Yes**
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	27.8 128.2	C F	27.9 **130.2**	C **F**	0.1 **2.0**	**Yes**
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	15.2 29.4	B C	15.3 32.7	B C	0.1 3.3	No
(Continued on Next Page)								

TABLE 16–1
YEAR 2050 WITH ALTERNATIVE 5
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2050 No-Action Alternative w/ APM		Year 2050 With Alternative 5		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM PM	239.3 130.4	F F	**244.1** **142.6**	**F** **F**	**4.8** **12.2**	**Yes**
34. Pacific Hwy / Laurel St	Signal	AM PM	152.8 172.8	F F	**160.7** **176.6**	**F** **F**	**7.9** **3.8**	**Yes**
35. Harbor Dr / Laurel St	Signal	AM PM	125.6 115.5	F F	**127.8** **122.7**	**F** **F**	**2.2** **7.2**	**Yes**
36. Pacific Hwy / Sea World Dr	Signal	AM PM	34.0 90.7	C F	**104.6** **143.9**	**F** **F**	**70.6** **53.2**	**Yes**
37. Sea World Dr / I-5 SB Ramps	Signal	AM PM	35.5 20.9	D C	35.6 21.0	D C	0.1 0.1	No
38. Sea World Dr / I-5 NB Ramps	Signal	AM PM	51.7 82.1	D F	51.8 82.2	D F	0.1 0.1	No
39. Morena Blvd / Linda Vista Rd	Signal	AM PM	17.1 24.3	B C	17.8 26.9	B C	0.7 2.6	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 16–2
YEAR 2050 WITH ALTERNATIVE 5
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative w/ APM			Year 2050 With Alternative 5			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	57,900	F	1.544	**60,710**	**F**	**1.619**	**0.075**	**2,810**	**Yes**
2. Lytton St to Midway Dr	50,000	53,030	F	1.061	**55,820**	**F**	**1.116**	**0.055**	**2,790**	**Yes**
3. Midway Dr to Sports Arena Blvd	50,000	62,810	F	1.256	**70,570**	**F**	**1.411**	**0.155**	**7,760**	**Yes**
4. Sports Arena Blvd to Kurtz St	30,000	33,580	F	1.119	**39,130**	**F**	**1.304**	**0.185**	**5,550**	**Yes**
5. E: Kurtz St to Pacific Hwy	30,000	28,520	E	0.951	**29,640**	**E**	**0.988**	**0.037**	**1,120**	**Yes**
Taylor Street										
6. Pacific Hwy to Congress St	45,000	19,530	B	0.434	25,080	C	0.557	0.123	5,550	No
7. Congress St to Juan St	45,000	18,170	B	0.404	23,720	B	0.527	0.123	5,550	No
8. Juan St to Presidio Dr	40,000	20,800	B	0.520	25,800	C	0.645	0.125	5,000	No
9. Presidio Dr to I-8 East Ramp	10,000	15,370	F	1.537	**18,710**	**F**	**1.871**	**0.334**	**3,340**	**Yes**
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	12,910	D	0.861	12,910	D	0.861	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	22,060	F	1.471	**27,610**	**F**	**1.841**	**0.370**	**5,550**	**Yes**
12. Taylor St to Kurtz St	50,000	21,380	B	0.428	28,850	C	0.577	0.149	7,470	No
13. Kurtz St to Sports Arena Blvd	50,000	56,360	F	1.127	**92,150**	**F**	**1.843**	**0.716**	**35,790**	**Yes**
14. Sports Arena Blvd to Barnett Ave	50,000	58,980	F	1.180	**80,320**	**F**	**1.606**	**0.426**	**21,340**	**Yes**
15. Barnett Ave to Witherby St	80,000	101,830	F	1.273	**134,230**	**F**	**1.678**	**0.405**	**32,400**	**Yes**
16. Witherby St to W. Washington St	80,000	104,630	F	1.308	**124,220**	**F**	**1.553**	**0.245**	**19,590**	**Yes**
17. W. Washigton St to Sassafras St	60,000	65,040	F	1.084	**81,770**	**F**	**1.363**	**0.279**	**16,730**	**Yes**
18. Sassafras St to W. Laurel St	50,000	25,310	B	0.506	27,590	B	0.552	0.046	2,280	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	43,760	F	1.094	**45,420**	**F**	**1.136**	**0.042**	**1,660**	**Yes**
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	29,330	E	0.978	**30,440**	**F**	**1.015**	**0.037**	**1,110**	**Yes**
Kurtz Street										
21. Rosecrans St to Pacific Hwy	8,000	22,880	F	2.860	**27,340**	**F**	**3.418**	**0.558**	**4,460**	**Yes**
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	28,750	D	0.767	30,410	D	0.811	0.044	1,660	No
23. Kemper St to East Dr	45,000	29,370	C	0.653	31,580	C	0.702	0.049	2,210	No
24. East Dr to Rosecrans St	45,000	28,330	C	0.630	31,100	C	0.691	0.061	2,770	No
25. Rosecrans St to Enterprise St	8,000	6,330	D	0.791	**7,990**	**E**	**0.999**	**0.208**	**1,660**	**Yes**
Midway Drive										
26. East Dr to Rosecrans St	30,000	40,650	F	1.355	**41,760**	**F**	**1.392**	**0.037**	**1,110**	**Yes**
27. Rosecrans St to Bogley Dr	30,000	27,310	E	0.910	**32,290**	**F**	**1.076**	**0.0166**	**4,980**	**Yes**
28. Bogley Dr to Barnett Ave	30,000	27,140	E	0.905	**41,520**	**F**	**1.384**	**0.479**	**14,380**	**Yes**
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	30,550	F	1.018	**32,780**	**F**	**1.093**	**0.075**	**2,230**	**Yes**

(Continued on Next Page)

TABLE 16–2
YEAR 2050 WITH ALTERNATIVE 5
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2050 No-Action Alternative w/ APM			Year 2050 With Alternative 5			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	32,780	F	1.093	**35,010**	**F**	**1.167**	**0.074**	**2,230**	**Yes**
31. Henderson Ave to Pacific Hwy	30,000	35,440	F	1.181	**50,390**	**F**	**1.680**	**0.499**	**14,950**	**Yes**
Hancock Street										
32. Old Town Ave to Witherby St	8,000	16,540	F	2.068	**28,800**	**F**	**3.600**	**1.532**	**12,260**	**Yes**
33. Witherby St to Noell St	8,000	6,430	D	0.804	**6,980**	**E**	**0.873**	**0.069**	**550**	**Yes**
34. Noell St to W. Washington St	8,000	22,770	F	2.846	22,770	F	2.846	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	24,690	F	3.086	24,690	F	3.086	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	29,550	C	0.739	32,340	D	0.809	0.070	2,790	No
37. Hancock St to W. University Ave	40,000	35,290	E	0.882	**38,080**	**E**	**0.952**	**0.070**	**2,790**	**Yes**

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 16–3
YEAR 2050 WITH ALTERNATIVE 5
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 5: Lower-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	218,370	6,900	1,265	2,160	0.586	20.6	C	225,080	7,215	1,323	2,160	0.613	21.5	C	0.027	No
	SB	5 Main + 1 Aux		8,380	1,536	2,160	0.711	25.3	C		8,551	1,568	2,160	0.726	25.9	C	0.015	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	234,770	7,950	1,760	2,133	0.825	30.7	D	246,470	8,501	1,882	2,133	0.882	34.3	D	0.057	No
	SB	5 Main		9,040	2,001	2,245	0.891	35.7	E		**9,338**	**2,067**	**2,245**	**0.921**	**37.9**	**E**	**0.030**	**Yes**
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	222,480	7,540	1,669	2,130	0.784	28.7	D	222,480	7,540	1,669	2,130	0.784	28.7	D	0.000	No
	SB	4 Main + 1 Aux		8,570	1,897	2,133	0.889	34.9	D		8,570	1,897	2,133	0.889	34.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	175,330	5,940	1,644	2,237	0.735	27.2	D	175,330	5,940	1,644	2,237	0.735	27.5	D	0.000	No
	SB	4 Main		6,750	1,868	2,245	0.832	32.0	D		6,750	1,868	2,245	0.832	32.0	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	182,450	6,180	1,710	2,237	0.764	28.5	D	182,450	6,180	1,710	2,237	0.764	28.5	D	0.000	No
	SB	4 Main		7,030	1,946	2,241	0.868	34.3	D		7,030	1,946	2,241	0.868	34.3	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	249,820	8,460	1,873	2,126	0.881	34.3	D	263,790	**8,816**	**1,952**	**2,126**	**0.918**	**37.1**	**E**	**0.037**	**Yes**
	SB	4 Main + 1 Aux		9,620	2,130	2,130	1.000	45.0	E		**10,277**	**2,275**	**2,130**	**1.068**	**—**	**F**	**0.068**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	276,450	9,370	2,075	2,119	0.979	42.80	E	290,420	**9,726**	**2,153**	**2,119**	**1.016**	**—**	**F**	**0.037**	**Yes**
	SB	4 Main + 1 Aux		10,650	2,358	2,112	1.116	—	F		**11,307**	**2,503**	**2,112**	**1.185**	**—**	**F**	**0.069**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	229,750	7,780	2,153	2,216	0.972	42.30	E	243,720	**8,136**	**2,252**	**2,216**	**1.016**	**—**	**F**	**0.044**	**Yes**
	SB	4 Main		8,850	2,449	2,220	1.103	—	F		**9,507**	**2,631**	**2,220**	**1.185**	**—**	**F**	**0.082**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	313,450	10,620	2,351	2,216	1.061	—	F	326,310	**10,947**	**2,424**	**2,216**	**1.094**	**—**	**F**	**0.033**	**Yes**
	SB	5 Main		12,080	2,675	2,213	1.209	—	F		**12,684**	**2,808**	**2,213**	**1.269**	**—**	**F**	**0.060**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	256,800	8,700	1,926	2,216	0.869	34.60	D	268,550	**8,999**	**1,992**	**2,216**	**0.899**	**36.5**	**E**	**0.030**	**Yes**
	SB	5 Main		9,890	2,190	2,216	0.988	43.80	E		**10,442**	**2,312**	**2,216**	**1.043**	**—**	**F**	**0.055**	**Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	116,880	3,840	1,050	2,248	0.467	16.9	B	118,540	3,882	1,061	2,248	0.472	17.1	B	0.005	No
	WB	4 Main		4,880	1,334	2,259	0.591	21.0	C		4,958	1,355	2,259	0.600	21.4	C	0.009	No
12. I-5 to Morena Blvd	EB	4 Main	140,580	4,110	1,124	2,241	0.502	18.3	C	147,260	4,424	1,209	2,241	0.539	19.7	C	0.037	No
	WB	3 Main		5,800	2,114	2,248	0.940	39.4	E		**5,970**	**2,176**	**2,248**	**0.968**	**41.8**	**E**	**0.028**	**Yes**

(Continued on Next Page)

TABLE 16–3
YEAR 2050 WITH ALTERNATIVE 5
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 5: Lower-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	233,750	6,830	1,494	2,126	0.703	24.7	C	240,430	7,144	1,562	2,126	0.735	26.1	D	0.032	No
	WB	5 Main		9,650	2,110	1,948	1.083	—	F		**9,820**	**2,147**	**1,948**	**1.102**	**—**	**F**	**0.019**	**Yes**
14. Taylor St to Hotel Circle	EB	4 Main	220,190	6,440	1,760	2,229	0.790	29.9	D	230,210	6,912	1,889	2,229	0.847	33.0	D	0.057	No
	WB	5 Main		9,090	1,988	2,237	0.889	35.6	E		**9,345**	**2,043**	**2,237**	**0.913**	**37.3**	**E**	**0.024**	**Yes**
15. Hotel Circle to SR-163	EB	4 Main	235,450	6,880	1,879	2,229	0.843	32.80	D	245,470	**7,352**	**2,008**	**2,229**	**0.901**	**36.5**	**E**	**0.058**	**Yes**
	WB	5 Main		9,720	2,123	2,229	0.952	40.50	E		**9,975**	**2,179**	**2,229**	**0.978**	**42.7**	**E**	**0.026**	**Yes**

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 16–4
YEAR 2050 WITH ALTERNATIVE 5
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 5: Lower-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB SB	5 Main + 1 Aux 5 Main + 1 Aux	218,370	6,860 9,690	1,258 1,777	2,160 2,160	0.582 0.823	20.5 30.8	C D	225,080	7,106 10,057	1,303 1,844	2,160 2,160	0.603 0.854	21.2 32.7	C D	0.021 0.031	No No
2. I-8 to Old Town Ave	NB SB	4 Main + 1 Aux 5 Main	234,770	8,480 9,040	1,877 2,001	2,133 2,245	0.880 0.891	34.2 35.7	D E	246,470	**8,909** **9,681**	**1,972** **2,143**	**2,133** **2,245**	**0.925** **0.955**	**37.6** **40.7**	**E** **E**	**0.045** **0.064**	**Yes** **Yes**
3. Old Town Ave to Washington St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.3 34.8	D D	222,480	8,030 8,560	1,778 1,895	2,130 2,133	0.835 0.888	31.3 34.8	D D	0.000 0.000	No No
4. Washington St to Sassafras St	NB SB	4 Main 4 Main	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.4 32.0	D D	175,330	6,330 6,750	1,752 1,868	2,237 2,245	0.783 0.832	29.4 32.0	D D	0.000 0.000	No No
5. Sassafras St to Pacific Hwy Viaduct	NB SB	4 Main 4 Main	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.1 34.1	D D	182,450	6,590 7,020	1,824 1,943	2,237 2,241	0.815 0.867	31.1 34.1	D D	0.000 0.000	No No
6. Pacific Hwy Viaduct to Laurel St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	249,820	9,020 9,620	1,997 2,130	2,126 2,130	0.939 1.000	38.9 45.0	E E	263,790	**9,783** **10,131**	**2,166** **2,243**	**2,126** **2,130**	**1.019** **1.053**	**—** **—**	**F** **F**	**0.080** **0.053**	**Yes** **Yes**
7. Laurel St to Hawthorn St	NB SB	4 Main + 1 Aux 4 Main + 1 Aux	276,450	9,980 10,640	2,210 2,356	2,119 2,112	1.043 1.116	— —	F F	290,420	**10,743** **11,151**	**2,379** **2,469**	**2,119** **2,112**	**1.123** **1.169**	**—** **—**	**F** **F**	**0.080** **0.053**	**Yes** **Yes**
8. Hawthorn St to 1st Ave	NB SB	4 Main 4 Main	229,750	8,300 8,840	2,297 2,446	2,216 2,220	1.037 1.102	— —	F F	243,720	**9,063** **9,351**	**2,508** **2,588**	**2,216** **2,220**	**1.132** **1.166**	**—** **—**	**F** **F**	**0.095** **0.064**	**Yes** **Yes**
9. 1st Ave to 6th Ave	NB SB	5 Main 5 Main	313,450	11,320 12,070	2,506 2,672	2,216 2,213	1.131 1.207	— —	F F	326,310	**12,023** **12,541**	**2,662** **2,777**	**2,216** **2,213**	**1.201** **1.255**	**—** **—**	**F** **F**	**0.070** **0.048**	**Yes** **Yes**
10. 6th Ave to SR-163	NB SB	5 Main 5 Main	256,800	9,270 9,890	2,052 2,190	2,216 2,216	0.926 0.988	38.40 43.80	E E	268,550	**9,912** **10,320**	**2,195** **2,285**	**2,216** **2,216**	**0.991** **1.031**	**44.1** **—**	**E** **F**	**0.065** **0.043**	**Yes** **Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB WB	4 Main 4 Main	116,880	3,010 4,700	823 1,285	2,248 2,259	0.366 0.569	13.2 20.3	B C	118,540	3,101 4,761	848 1,301	2,248 2,259	0.377 0.576	13.6 20.5	B C	0.011 0.007	No No
12. I-5 to Morena Blvd	EB WB	4 Main 3 Main	140,580	5,640 4,430	1,542 1,615	2,241 2,248	0.688 0.718	25.2 26.3	C D	147,260	5,885 4,796	1,608 1,748	2,241 2,248	0.718 0.778	26.4 29.0	D D	0.030 0.060	No No

(Continued on Next Page)

TABLE 16–4
YEAR 2050 WITH ALTERNATIVE 5
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Year 2050 No-Action Alternative including an Automated Passenger Mover							Year 2050 with Alternative 5: Lower-Density Mixed-used Revitalization Including a Transit Center							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	233,750	9,370	2,049	2,126	0.964	41.1	E	240,430	**9,615**	**2,103**	**2,126**	**0.989**	**43.8**	**E**	**0.025**	**Yes**
	WB	5 Main		7,360	1,609	1,948	0.826	29.3	D		7,726	1,689	1,948	0.867	32.0	D	0.041	No
14. Taylor St to Hotel Circle	EB	4 Main	220,190	8,830	2,414	2,229	1.083	—	F	230,210	**9,197**	**2,514**	**2,229**	**1.128**	**—**	**F**	**0.045**	**Yes**
	WB	5 Main		6,940	1,518	2,237	0.679	24.9	C		7,489	1,638	2,237	0.732	27.1	D	0.053	No
15. Hotel Circle to SR-163	EB	4 Main	235,450	9,440	2,578	2,229	1.157	—	F	245,470	**9,807**	**2,678**	**2,229**	**1.201**	**—**	**F**	**0.044**	**Yes**
	WB	5 Main		7,420	1,621	2,229	0.727	27.00	D		7,969	1,741	2,229	0.781	29.5	D	0.054	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Year 2050 No-Action Alternative including an APM							2 SOV
	AM	501	335	166	30	4,150	166
	PM	538	318	220	42	5,500	220
Year 2050 with Alternative 5							2 SOV
	AM	777	335	442	79	11,038	442
	PM	753	318	435	82	10,863	435
Δ	**AM**			**276**	**49**	**6,888**	**276**
	PM			**215**	**40**	**5,363**	**215**

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.

b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).

c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.

d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.

e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.
3. **Bold** typeface and shading represent a significant impact.

16.5 Significant Impacts and Mitigation Measures

Alternative 5 results in the same significant cumulative impacts as Alternative 4. Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center would have significant cumulative impacts at **26** intersections, on **25** street segments, on **10** freeways segments, and at **one (1)** ramp meter.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange that would improve access to the OTC Site as well as reduce area traffic on local streets. This network improvement is proposed as mitigation for several impacted locations. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (only under the Alternative 4 and Alternative 5 scenarios where the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. A concept plan showing this improvement is depicted later on in *Section 29.0* of this report.

For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints and where the reconstructed interchange would not fully mitigate, it is recommended that the Proposed Action alternative contribute to the implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 16–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 16–1 shows an illustration of the significantly impacted locations.

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Alt 5-I-1	2	Taylor St/ I-8 EB Ramps	San Diego/ Caltrans	Per the Mission Valley Community Plan, the entirety of Hotel Circle will be transformed from a bi-directional collector to a one-way couplet running in the clockwise direction. As part of this network change, the Taylor Street/I-8 Eastbound Ramps interchange will be eliminated and replaced by a new signalized interchange at I-8 with the future connection of Via Las Cumbres. Given the unknown timing for implementation and the lack of an identified funding source in the Mission Valley Community Plan, the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-2	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-3	7	Rosecrans St/ Jefferson St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/ Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic is observed would not be beneficial to the major street traffic flow. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-4	8	Camino Del Rio W/ Hancock St	San Diego	The intersection is built out with regard to available right-of-way. Additional through lanes on Camino Del Rio West are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-5	11	Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane. The planned improvements allow southbound movements to continue on Sports Arena Boulevard through the intersection. Notably, vehicles would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West. With the improvements proposed at this intersection, the Community Plan reports LOS D results. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-6	12	Rosecrans St/ Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes an exclusive southbound right-turn lane with an overlap phase, a westbound right-turn overlap phase, and an eastbound right-turn overlap phase. With the improvements proposed at this intersection, the Community Plan reports LOS E results, concluding the impact remains significant and unavoidable. With the additional traffic added by the Proposed Action alternative, the intersection continues to operate at LOS E. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-7	13	Rosecrans St/ Lytton St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-8	14	Truxtun Rd/ Lytton St/ Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.	Yes
Alt 5-I-9	15	Midway Dr/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Barnett Avenue intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the westbound right-turning movement is substantial. Those additional trips result in a significant delay for southbound right-turns from Enterprise Street onto Midway Drive. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Barnett Avenue intersection, reconstructing this intersection in combination with the Midway/ Barnett Avenue intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-10	16	Barnett Ave/ Midway Dr	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. From centerline to centerline, this intersection is approximately 160 feet from the Midway Drive/ Enterprise Street intersection. The existing configuration of these two intersections are such that raised medians restrict turning movements requiring out of direction travel on Midway Drive, Barnett Avenue and Jessop Lane. The traffic added by the Proposed Action alternative to the southbound right-turning and eastbound left-turning movements is substantial. Those additional trips result in a significant delay at this intersection. Due to the physical constraints and irregular configuration of this intersection and its proximity to the Midway Drive/ Enterprise Street, reconstructing this intersection in combination with the Midway Drive/ Enterprise Street intersection into a signalized four-way intersection would be required to partially mitigate this impact. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-11	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-12	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes
Alt 5-I-13	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-14	22	Old Town Ave/ San Diego Ave	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Extra lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-15	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Moore Street intersection that effectively operates as the I-5 North interchange with Old Town Avenue. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-I-16	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Hancock Street intersection that effectively operates as the I-5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-17	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-I-18	26	Witherby St/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5

YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-19	27	Tripoli Ave/ Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to remove the grade separation between Witherby Street, Pacific Highway, and Tripoli Avenue and construct an at-grade four-way signalized allowing for full movements. The Community Plan does not further analyze these improvements or discuss their feasibility. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-I-20	28	Noell St/ Hancock St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installing a traffic signal at this intersection would mitigate the impact to below a level of significance.	Yes
Alt 5-I-21	30	Washington St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are recommended at this intersection. The Community Plan recommends restriping the southbound approach to provide a second right-turn lane. However, the Community Plan states that the provision of the additional turn lane would eliminate heavily utilized street parking and concluded impacts to this intersection would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5

YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-22	31	Washington St/ Pacific Hwy (N)	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends participation by the airport in regional efforts to develop a long-range transportation solution for accessing the airport, including: 1) participate in regional planning efforts led by SANDAG to determine transit connections between regional transit and the airport terminals, freeway connections along the Laurel Street corridor, intelligent transportation systems, and mobility hub improvements/strategies; and 2) participate in the implementation of improvements and strategies identified in the Airport Connectivity Analysis. However, the improvements were considered infeasible because parts of the mitigation measures are within the control of other agencies or jurisdictions. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-I-23	33	Pacific Hwy/ Sassafras St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-I-24	34	Pacific Hwy / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the removal of a westbound through land and addition of a second eastbound left-turn lane, conversion of a southbound through lane into a second right-turn lane, and re-coordination of the signals along Laurel Street. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. Implementation of these improvements in the Airport Development Plan showed the intersection would continue to operate at poor LOS conditions rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-25	35	Harbor Dr / Laurel St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a third eastbound left-turn lane and removal of an eastbound through lane to add capacity to the intersection, though the additional capacity continued to result in poor LOS operations rendering the impact not fully mitigated. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-I-26	36	Pacific Hwy / Sea World Dr	San Diego	There are no planned improvements in the Mission Bay Park Master Plan at this intersection. In order to improve operations at this intersection, the Proposed Action alternative should construct an additional southbound left-turn lane from SeaWorld Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
STREET SEGMENTS					
		Rosecrans Street			
Alt 5-S-1	1	Dewey Rd to Lytton St	San Diego	Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-2	2	Lytton St to Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-3	3	Midway Dr to Sports Arena Blvd	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-4	4	Sports Arena Blvd to Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-5	5	E: Kurtz St to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a s four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Taylor Street			
Alt 5-S-6	9	Presidio Dr to I-8 East Ramp	San Diego	There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town Community, the Community Plan does not propose any road widenings or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Pacific Highway			
Alt 5-S-7	11	SeaWorld Dr to Taylor St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge would be infeasible. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-8	13	Kurtz St to Sports Arena Blvd	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-9	14	Sports Arena Blvd to Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Although the interchange project improves operations along Pacific Highway, the daily volumes on this segment of Pacific Highway would continue to exceed the capacity of the roadway. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Alt 5-S-10	15	Barnett Ave to Witherby St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-11	16	Witherby St to W. Washington St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-12	17	W. Washington St to Sassafras St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Morena Boulevard			
Alt 5-S-13	19	Friars Rd to I-8	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Morena Boulevard to increase the capacity along this roadway. Due to the lack of available right-of-way and this roadway serving as a bridge over the environmentally sensitive San Diego River, widening the bridge to four lanes would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Linda Vista Road			

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-14	20	Morena Blvd to Colusa St	San Diego	Per the Linda Vista Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Linda Vista Road currently functions as a four-lane Collector with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Road with a raised median with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Kurtz Street			
Alt 5-S-15	21	Rosecrans to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Sports Arena Blvd			
Alt 5-S-16	25	Rosecrans St to Enterprise St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Sports Arena Boulevard currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Midway Drive			
Alt 5-S-17	26	East Dr to Rosecrans St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional capacity is needed on Midway Drive to improve operations along this roadway. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. Due to the lack of available right-of-way, widening the roadway to four-lane Major Arterial standards would be infeasible. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-18	27	Rosecrans St to Bogley Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-19	28	Bogley Dr to Barnett Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports LOS C results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact on this street segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Lytton Street			
Alt 5-S-20	29	Rosecrans St to St. Charles St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Lytton Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with an LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5

YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
		Barnett Avenue			
Alt 5-S-21	30	St. Charles St to Henderson Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Alt 5-S-22	31	Henderson Ave to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Hancock Street			
Alt 5-S-23	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. With the improvements proposed along this street segment, the Community Plan reports mid-LOS D results. However, the additional traffic added by the Proposed Action alternative degrades roadway operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-S-24	33	Witherby St to Noell St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5; direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
		W. Washington Street			
Alt 5-S-25	37	Hancock St to W. University Ave	San Diego	There are no planned improvements in the Uptown Community Plan along this street segment. Additional lanes are needed on Washington Street to increase the capacity along this roadway. Widening this section of Washington Street requires substantial grading and filling on both sides of the roadway. On the south side, a steep grade abuts the shoulder. On the north side, a drainage ditch lies adjacent to the roadway. The physical constraints of widening this segment of Washington Street would render this impact significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
FREEWAYS					
Alt 5-F-1	2	I-5: I-8 to Old Town Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 16–5

YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-F-2	6	I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 5-F-3	7	I-5: Laurel St to Hawthorn St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 5-F-4	8	I-5: Hawthorn St to 1st Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 5-F-5	9	I-5: 1st Ave to 6th Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-F-6	10	I-5: 6th Ave to SR-163	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies “operational improvements” along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 5-F-7	12	I-8: I-5 to Morena Blvd	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-F-8	13	I-8: Morena Blvd to Hotel Circle/Taylor Street	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Alt 5-F-9	14	I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 16–5
YEAR 2050 WITH ALTERNATIVE 5 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Alt 5-F-10	15	I-8: Hotel Circle to SR-163	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
RAMP METER					
Alt 5-R-1	1	Moore St/I-5 NB On-Ramp	Caltrans	Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to I-5 northbound. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?

IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
2	Alt 5-I-1	22	Alt 5-I-14
6	Alt 5-I-2	23	Alt 5-I-15
7	Alt 5-I-3	24	Alt 5-I-16
8	Alt 5-I-4	25	Alt 5-I-17
11	Alt 5-I-5	26	Alt 5-I-18
12	Alt 5-I-6	27	Alt 5-I-19
13	Alt 5-I-7	28	Alt 5-I-20
14	Alt 5-I-8	30	Alt 5-I-21
15	Alt 5-I-9	31	Alt 5-I-22
16	Alt 5-I-10	33	Alt 5-I-23
18	Alt 5-I-11	34	Alt 5-I-24
19	Alt 5-I-12	35	Alt 5-I-25
20	Alt 5-I-13	36	Alt 5-I-26

Figure 16–1 Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center Impact Summary

- \# Study Intersection
- Project Site
- Parks
- Wetlands
- Impact Mitigated
- Impact Unmitigated
- Alt X-S-X Street Segment Impact ID
- Alt X-S-X Freeway Segment Impact ID
- Alt X-S-X Freeway Ramp Impact ID

0 0.35 0.7 Miles

17.0 NEAR-TERM YEAR 2030 ANALYSIS

The following section presents the analysis of study area intersections, street segments, and freeway segments under Near-Term Year 2030 conditions. No changes to the street network over existing conditions were assumed in the analysis.

17.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Near-Term Year 2030 conditions. ***Table 17–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F:

- Intersection #6 Rosecrans Street & Taylor Street / Pacific Highway – LOS E during the p.m. peak hour
- Intersection #7. Rosecrans Street / Jefferson Street – LOS F during the p.m. peak hour
- Intersection #8. Camino Del Rio W. / Hancock Street – LOS E during the p.m. peak hour
- Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS E during the p.m. peak hour
- Intersection #18. Pacific Highway / Kurtz Street – LOS F during the p.m. peak hour
- Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the p.m. peak hour
- Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours
- Intersection #23. Old Town Avenue / Moore Street – LOS F/E during the a.m./p.m. peak hours
- Intersection #26. Witherby Street / Pacific Highway – LOS E during the p.m. peak hour
- Intersection #33. Pacific Highway / Sassafras Street – LOS F/E during the a.m./p.m. peak hours
- Intersection #34. Pacific Highway / Laurel Street – LOS E during the a.m. and p.m. peak hours
- Intersection #35. Harbor Drive / Laurel Street – LOS E during the p.m. peak hour
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS E during the p.m. peak hour

Appendix V contains the intersection analysis worksheets for the Near-Term Year 2030 scenario.

17.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Near-Term Year 2030 conditions. ***Tables 17–2*** reports the Near-Term Year 2030 street segment operations on a daily basis. The following segments are calculated to operate at LOS E or F:

- Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)
- Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)

- Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)
- Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS E)
- Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)
- Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS E)
- Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS E)
- Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS E)
- Street Segment #21. Kurtz Street: Rosecrans Street to St. Charles Street (LOS F)
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- Street Segment #29. Lytton Street: Rosecrans Street to St. Charles Street (LOS E)
- Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS E)
- Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)
- Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)

17.3 Peak Hour Freeway Segment Operations

Freeway segment analyses were conducted in the study area under Near-Term Year 2030 conditions. ***Tables 17–3*** and ***17–4*** reports the Near-Term Year 2030 peak hour freeway segment operations. The following freeway segments are calculated to operate at LOS E or F:

- Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)
- Freeway Segment #10. I-5: 6th Avenue to SR-163, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)
- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak) an
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS E – a.m. peak)
- Freeway Segment #14. I-8: Taylor Street to Hotel Circle, EB (LOS F – p.m. peak)
- Freeway Segment #15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)

Appendix W contains the detailed HCS calculations sheets for the Near-Term Year 2030.

17.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 on-ramp meter was analyzed under Near-Term Year 2030 conditions. ***Table 17–5*** reports the Near-Term Year 2030 ramp meter operations.

- Ramp Meter #1. Moore Street/ I-5 NB On-ramp – No delay and no queues during the a.m. peak hour and delay of 8 minutes and queue of 42 vehicles during the p.m. peak hour are calculated at the *Moore Street / NB I-5 On-Ramp* under Near-Term Year 2030 conditions.

As shown in *Section 17.1.3* above, the freeway mainline segment downstream of this on-ramp is calculated to operate at acceptable LOS D or better. Therefore, this on-ramp is expected to operate at an acceptable delay under Near-Term Year 2030 conditions.

TABLE 17–1
NEAR-TERM YEAR 2030
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030	
			Delay [a]	LOS [b]
1. Taylor St/ Hotel Circle South	AWSC [c]	AM PM	10.4 17.2	B C
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	14.4 24.1	B C
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	16.1 12.9	B B
4. Taylor St/ Juan St	Signal	AM PM	12.9 30.0	B C
5. Congress St/ Taylor St	Signal	AM PM	8.6 17.9	A B
6. Pacific Hwy/ Rosecrans St/Taylor St	Signal	AM PM	54.6 71.9	D E
7. Rosecrans St/ Jefferson St	TWSC [d]	AM PM	20.5 62.2	C F
8. Camino Del Rio W/ Hancock St	Signal	AM PM	43.3 71.4	D E
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	9.9 25.9	A C
10. Rosecrans St/ Kurtz St	Signal	AM PM	11.6 24.2	B C
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	16.7 48.0	B D
12. Rosecrans St/ Midway Dr	Signal	AM PM	34.6 49.9	C D
13. Rosecrans St/ Lytton St	Signal	AM PM	51.2 54.9	D D
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	43.1 78.2	D E
15. Midway Dr/ Enterprise St	Signal	AM PM	14.7 15.7	B C
16. Barnett Ave/ Midway Dr	Signal	AM PM	8.3 10.4	A B

(Continued on Next Page)

TABLE 17–1
NEAR-TERM YEAR 2030
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030	
			Delay [a]	LOS [b]
(Continued from Previous Page)				
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	11.3 11.2	B B
18. Pacific Hwy/ Kurtz St	Signal	AM PM	26.3 106.3	D F
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	12.8 85.1	B F
20. Pacific Hwy/ Enterprise St	Signal	AM PM	84.5 119.8	F F
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*	
22. Old Town Ave/ San Diego Ave	Signal	AM PM	30.3 17.3	C B
23. Old Town Ave/ Moore St	Signal	AM PM	118.1 63.9	F E
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	34.6 29.1	D D
25. Witherby St/ Hancock St	AWSC	AM PM	16.1 27.1	C D
26. Witherby St/ Pacific Hwy	AWSC	AM PM	14.0 46.1	B E
27. Tripoli Ave/ Witherby St	AWSC	AM PM	9.9 15.3	A C
28. Noell St/ Hancock St	AWSC	AM PM	13.3 20.6	B C
29. Washington St/ San Diego Ave	Signal	AM PM	23.3 13.3	C B
30. Washington St/ Hancock St	Signal	AM PM	23.7 29.0	C C
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	15.4 50.2	B D
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	13.0 16.8	B B
(Continued on Next Page)				

TABLE 17–1
NEAR-TERM YEAR 2030
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030 Delay [a]	Near-Term Year 2030 LOS [b]
(Continued from Previous Page)				
33. Pacific Hwy/ Sassafras St	Signal	AM	96.2	F
		PM	58.8	E
34. Pacific Hwy / Laurel St	Signal	AM	62.6	E
		PM	78.4	E
35. Harbor Dr / Laurel St	Signal	AM	52.6	D
		PM	58.6	E
36. Pacific Hwy / Sea World Dr	Signal	AM	22.0	C
		PM	54.2	D
37. Sea World Dr / I-5 SB Ramps	Signal	AM	19.9	B
		PM	22.2	C
38. Sea World Dr / I-5 NB Ramps	Signal	AM	40.0	D
		PM	57.8	E
39. Morena Blvd / Linda Vista Rd	Signal	AM	16.6	B
		PM	23.3	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. All-Way Stop Control. Average delay reported.
d. Two-Way Stop Control. Worst critical movement delay reported.

SIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS	UNSIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

Table 17–2
Near-Term Year 2030
Segment Operations

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
Rosecrans Street					
1. Dewey Rd to Lytton St	5-Lane Collector (TWLTL)	37,500	53,770	F	1.434
2. Lytton St to Midway Dr	6-Lane Major	50,000	52,090	F	1.042
3. Midway Dr to Sports Arena Blvd	6-Lane Major	50,000	60,340	F	1.207
4. Sports Arena Blvd to Kurtz St	4-Lane Collector (TWLTL)	30,000	25,090	E	0.836
5. E: Kurtz St to Pacific Hwy	4-Lane Collector (TWLTL)	30,000	17,430	C	0.581
Taylor Street					
6. Pacific Hwy to Congress St	5-Lane Major (Raised Median)	45,000	18,720	B	0.416
7. Congress St to Juan St	5-Lane Major (Raised Median)	45,000	16,190	A	0.360
8. Juan St to Presidio Dr	4-Lane Major (Raised Median)	40,000	16,520	A	0.413
9. Presidio Dr to I-8 East Ramp	2-Lane Collector	10,000	14,770	F	1.477
Hotel Circle S.					
10. I-8 East Ramp to Bachman Pl	2-Lane Collector (TWLTL)	15,000	8,990	C	0.599
Pacific Highway					
11. SeaWorld Dr to Taylor St	2-Lane Collector (TWLTL)	15,000	10,380	D	0.692
12. Taylor St to Kurtz St	6-Lane Major (Raised Median)	50,000	14,690	A	0.294
13. Kurtz St to Sports Arena Blvd	6-Lane Major (Raised Median)	50,000	27,800	B	0.556
14. Sports Arena Blvd to Barnett Ave	5-Lane Prime Arterial	50,000	31,540	C	0.631
15. Barnett Ave to Witherby St	Expressway	80,000	74,320	E	0.929
16. Witherby St to W. Washington St	Expressway	80,000	71,970	E	0.900
17. W. Washigton St to Sassafras St	6-Lane Prime Arterial	60,000	22,010	A	0.367
18. Sassafras St to W. Laurel St	6-Lane Major (Raised Median)	50,000	19,830	A	0.397
Morena Boulevard					
19. Friars Rd to I-8	4-Lane Major (Raised Median)	40,000	42,890	F	1.072
Linda Vista Road					
20. Morena Blvd to Colusa St	4-Lane Collector (TWLTL)	30,000	27,760	E	0.925
Kurtz Street					
21. Rosecrans to Pacific Hwy	2-Lane Collector (WP)	8,000	13,920	F	1.740
Sports Arena Blvd					
22. Midway Dr to Kemper St	5-Lane Collector (TWLTL)	37,500	21,420	C	0.571
23. Kemper St to East Dr	5-Lane Major (Raised Median)	45,000	24,070	B	0.535
24. East Dr to Rosecrans St	5-Lane Major (Raised Median)	45,000	26,690	C	0.593
25. Rosecrans St to Enterprise St	2-Lane Collector (WP)	8,000	2,810	B	0.351
Midway Drive					
26. East Dr to Rosecrans St	4-Lane Collector (TWLTL)	30,000	33,880	F	1.129
27. Rosecrans St to Bogley Dr	4-Lane Collector (TWLTL)	30,000	23,850	D	0.795
28. Bogley Dr to Barnett Ave	4-Lane Collector (TWLTL)	30,000	22,180	D	0.739
Lytton Street					
29. Rosecrans St to St. Charles St	4-Lane Collector (TWLTL)	30,000	28,670	E	0.956

(Continued on Next Page)

TABLE 17–2
NEAR-TERM YEAR 2030
SEGMENT OPERATIONS

Street Segment	Classification	Capacity (LOS E) [a]	ADT	LOS [b]	V/C [c]
(Continued from Previous Page)					
Barnett Avenue					
30. St. Charles St to Henderson Ave	4-Lane Collector (Raised Median)	30,000	29,730	E	0.991
31. Henderson Ave to Pacific Hwy	4-Lane Collector with TWLTL	30,000	31,730	F	1.058
Hancock Street					
32. Old Town Ave to Witherby St	2-Lane Collector (WP)	8,000	10,370	F	1.296
33. Witherby St to Noell St	2-Lane Collector (WP)	8,000	5,010	D	0.626
34. Noell St to W. Washington St	2-Lane Collector (WP)	8,000	16,820	F	2.103
W. Washington Street					
35. Admiral Boland Way to Pacific Hwy	2-Lane Collector	8,000	18,900	F	2.363
36. Pacific Hwy to Hancock St	4-Lane Major (Raised Median)	40,000	22,910	C	0.573
37. Hancock St to W. University Ave	4-Lane Major (Raised Median)	40,000	29,430	C	0.736

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.

TABLE 17–3
NEAR TERM YEAR 2030
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5														
1. Sea World to I-8	NB	5 Main + 1 Aux	201,820	6,380	6,340	1,170	1,162	2,160	0.542	0.538	19.0	18.9	C	C
	SB	5 Main + 1 Aux		7,750	8,960	1,421	1,643	2,160	0.658	0.761	23.1	27.5	C	D
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	216,460	7,330	7,820	1,623	1,731	2,133	0.761	0.812	27.2	29.9	D	D
	SB	5 Main		8,340	8,330	1,846	1,844	2,245	0.822	0.821	31.4	31.4	D	D
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	211,710	7,170	7,640	1,587	1,692	2,130	0.745	0.794	26.5	29.0	D	D
	SB	4 Main + 1 Aux		8,160	8,150	1,807	1,804	2,133	0.847	0.846	32.0	31.9	D	D
4. Washington St to Sassafras St	NB	4 Main	162,740	5,510	5,880	1,525	1,627	2,237	0.682	0.727	25.0	26.8	C	D
	SB	4 Main		6,270	6,260	1,735	1,732	2,245	0.773	0.771	28.8	28.8	D	D
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	167,850	5,690	6,060	1,575	1,677	2,237	0.704	0.750	25.9	27.9	C	D
	SB	4 Main		6,470	6,460	1,790	1,788	2,241	0.799	0.798	30.2	30.2	D	D

(Continued on Next Page)

TABLE 17–3
NEAR TERM YEAR 2030
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
(Continued from Previous Page)														
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	220,740	7,480	7,970	1,656	1,765	2,126	0.779	0.830	28.2	31.0	D	D
	SB	4 Main + 1 Aux		8,500	8,500	1,882	1,882	2,130	0.884	0.884	34.5	34.5	D	D
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	230,600	7,810	8,330	1,590	1,844	2,119	0.750	0.870	26.9	33.6	D	D
	SB	4 Main + 1 Aux		8,880	8,880	1,966	1,966	2,112	0.931	0.931	38.2	38.2	E	E
8. Hawthorn St to 1st Ave	NB	4 Main	192,620	6,530	6,950	1,807	1,924	2,216	0.815	0.868	31.5	34.5	D	D
	SB	4 Main		7,420	7,410	2,054	2,051	2,220	0.925	0.924	38.4	38.3	E	E
9. 1st Ave to 6th Ave	NB	5 Main	252,110	8,540	9,100	1,891	2,015	2,216	0.853	0.909	33.6	37.2	D	E
	SB	5 Main		9,710	9,700	2,150	2,148	2,213	0.972	0.971	42.2	42.2	E	E
10. 6th Ave to SR-163	NB	5 Main	230,910	7,820	8,340	1,731	1,846	2,216	0.781	0.833	29.8	32.4	D	D
	SB	5 Main		8,900	8,890	1,970	1,968	2,216	0.889	0.888	35.8	35.8	E	E
Interstate 8														
11. W. Mission Bay Dr /Midway Dr to I-5	EB	4 Main	107,850	3,550	2,770	970	757	2,248	0.431	0.337	15.6	12.2	B	B
	WB	4 Main		4,500	4,330	1,230	1,184	2,259	0.544	0.524	19.4	18.7	C	C

TABLE 17–3
NEAR TERM YEAR 2030
FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	ADT	Peak Hour Volume [b]		Flow Rate (pc/h/ln) [c]		Adjusted Capacity (pc/h/ln) [d]	V/C [e]		Density [f]		LOS [g]	
				AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
12. I-5 to Morena Blvd	EB	4 Main	136,530	3,990	5,480	1,090	1,498	2,241	0.486	0.668	17.7	24.4	B	C
	WB	3 Main		5,630	4,300	2,052	1,567	2,248	0.913	0.697	37.3	25.4	E	C
13. Morena Blvd to Hotel Circle /Taylor St	EB	4 Main + 1 Aux	208,900	6,110	8,380	1,336	1,832	2,126	0.628	0.862	21.9	33.0	C	D
	WB	5 Main		8,620	6,580	1,885	1,439	1,948	0.968	0.739	41.1	24.5	E	C
14. Taylor St to Hotel Circle	EB	4 Main	207,070	6,050	8,300	1,654	2,269	2,229	0.742	1.018	27.7	—	D	F
	WB	5 Main		8,540	6,520	1,867	1,426	2,237	0.835	0.637	32.2	23.3	D	C
15. Hotel Circle to SR-163	EB	4 Main	222,800	6,510	8,930	1,778	2,438	2,229	0.798	1.094	30.3	—	D	F
	WB	5 Main		9,190	7,020	2,008	1,533	2,229	0.901	0.688	36.5	25.4	E	C

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. LOS = Level of Service

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. Main = Mainline
2. Aux = Auxiliary
3. Truck factor sourced to most recent Caltrans Traffic Census Program *Peak Hour Volume Data* (2016).
4. "—" density exceeds the maximum threshold for LOS F.

Table 17–4
Near-Term Year 2030
Ramp Meter Operations

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Near-Term Year 2030						2 SOV	
	AM	325	335	0	0	0	0
	PM	360	318	42	8	1,050	42

Footnotes:

a. Peak Hour Flow “D” is the traffic that desires to enter the freeway at this on-ramp during the peak hour.

b. Discharge Rate “R” is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).

c. Excess Demand “E” is the difference between the Peak Hour Flow and the Discharge Rate.

d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.

e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Note:

1. SOV – Single Occupancy Vehicle Lane

18.0 NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2: HIGHER-DENSITY MIXED-USE REVITALIZATION (25%) ANALYSIS

The following section presents the analysis of study area intersections, street segments, freeway segments, and ramp meters under Near-Term Year 2030 conditions with the addition of 25% of Alternative 2: Higher-density Mixed-Use Revitalization traffic. No changes to the street network over existing conditions were assumed in the analysis. For the purposes of this study, impacts identified under Near-Term Year 2030 conditions are considered "direct" transportation impacts.

18.1 Peak Hour Intersection Operations

Intersection capacity analyses were conducted for the study intersections under Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) conditions. ***Table 18–1*** reports the intersection operations during peak hour conditions. The following intersections are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Intersection #6. Rosecrans Street & Taylor Street / Pacific Highway – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #7. Rosecrans Street / Jefferson Street – LOS F during the p.m. peak hour**
- Intersection #8. Camino Del Rio W. / Hancock Street – LOS E during the p.m. peak hour
- **Intersection #13. Rosecrans Street / Lytton Street – LOS E during the p.m. peak hour**
- **Intersection #14. Lytton Street & Barnett Avenue / Truxtun Road – LOS F during the p.m. peak hour**
- **Intersection #18. Pacific Highway / Kurtz Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #19. Pacific Highway / Sports Arena Boulevard – LOS F during the p.m. peak hour**
- **Intersection #20. Pacific Highway / Enterprise Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #23. Old Town Avenue / Moore Street – LOS F during the a.m. and p.m. peak hours**
- **Intersection #24. Old Town Avenue / Hancock Street – LOS F/E during the a.m./p.m. peak hours**
- **Intersection #25. Witherby Street / Hancock Street – LOS E/F during the a.m./p.m. peak hours**
- **Intersection #26. Witherby Street / Pacific Highway – LOS F during the p.m. peak hour**
- **Intersection #33. Pacific Highway / Sassafras Street – LOS F/E during the a.m./p.m. peak hours**
- Intersection #34. Pacific Highway / Laurel Street – LOS E during the a.m. and p.m. peak hours
- Intersection 35. Harbor Drive / Laurel Street – LOS E during the p.m. peak hour

- **Intersection #36. Pacific Highway / Sea World Drive – LOS E during the p.m. peak hour**
- Intersection #38. Sea World Drive / I-5 NB Ramps – LOS E during the p.m. peak hour

Based on the established significance criteria, **13 significant direct impacts** were calculated with the addition of Alternative 2 (25%) traffic at the intersections **bolded and underlined** above since the Proposed Action alternative-induced change in delay is greater than 2.0 seconds for LOS E operating intersections and greater than 1.0 second for LOS F operating intersections.

Appendix X contains the intersection analysis worksheets for the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%) scenario.

18.2 Daily Street Segment Operations

Street segment analyses were conducted for roadways in the study area under Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%). ***Tables 18–2*** reports the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%) street segment operations on a daily basis. The following segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Street Segment #1. Rosecrans Street: Dewey Road to Lytton Street (LOS F)**
- **Street Segment #2. Rosecrans Street: Lytton Street to Midway Drive (LOS F)**
- **Street Segment #3. Rosecrans Street: Midway Drive to Sports Arena Boulevard (LOS F)**
- **Street Segment #4. Rosecrans Street: Sports Arena Boulevard Kurtz Street (LOS E)**
- **Street Segment #9. Taylor Street: Presidio Drive to I-8 East Ramp (LOS F)**
- **Street Segment #15. Pacific Highway: Barnett Avenue to Witherby Street (LOS F)**
- **Street Segment #16. Pacific Highway: Witherby Street to W. Washington Street (LOS E)**
- Street Segment #19. Morena Boulevard: Friars Road to I-8 (LOS F)
- Street Segment #20. Linda Vista Road: Morena Boulevard to Colusa Street (LOS E)
- **Street Segment #21. Kurtz Street: Rosecrans Street to Pacific Highway (LOS F)**
- Street Segment #26. Midway Drive: East Drive to Rosecrans Street (LOS F)
- **Street Segment #28. Midway Drive: Bogley Drive to Barnett Avenue (LOS E)**
- Street Segment #29**.** Lytton Street: Rosecrans Street to St. Charles Street (LOS E)
- **Street Segment #30. Barnett Avenue: St. Charles Street to Henderson Avenue (LOS F)**
- **Street Segment #31. Barnett Avenue: Henderson Avenue to Pacific Highway (LOS F)**
- **Street Segment #32. Hancock Street: Old Town Avenue to Witherby Street (LOS F)**
- Street Segment #34. Hancock Street: Noell Street to W. Washington Street (LOS F)
- Street Segment #35. W. Washington Street: Admiral Boland Way to Pacific Highway (LOS F)

Based on the established significance criteria, **12 significant direct impacts** were calculated with the addition of Alternative 2 (25%) traffic at the locations **bolded and underlined** above, since the Proposed Action alternative-induced change in V/C is greater than 0.02 for LOS E operating street segments and greater than 0.01 for LOS F operating street segments.

18.3 Peak Hour Freeway Segment Operations

Freeway segments were analyzed under the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) conditions. ***Tables 18–3*** and ***18–4*** report the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) freeway segment operations during the a.m. and p.m. peak hours, respectively. The following freeway segments are calculated to operate at LOS E or F with the addition of the Proposed Action alternative:

- **Freeway Segment #6. I-5: Pacific Highway Viaduct to Laurel Street, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)**
- **Freeway Segment #7. I-5: Laurel Street to Hawthorn Street, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)**
- **Freeway Segment #8. I-5: Hawthorn Street to 1st Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)**
- **Freeway Segment #9. I-5: 1st Avenue to 6th Avenue, SB (LOS E – a.m. peak) and NB/SB (LOS E – p.m. peak)**
- **Freeway Segment #10. I-5: 6th Avenue to SR-163, SB (LOS E – a.m. peak) and SB (LOS E – p.m. peak)**
- Freeway Segment #12. I-8: I-5 to Morena Boulevard, WB (LOS E – a.m. peak)
- Freeway Segment #13. I-8: Morena Boulevard to Hotel Circle/Taylor Street, WB (LOS E – a.m. peak)
- **Freeway Segment#14. I-8: Taylor Street to Hotel Circle, EB (LOS F – p.m. peak)**
- **Freeway Segment#15. I-8: Hotel Circle to SR-163, WB (LOS E – a.m. peak) and EB (LOS F – p.m. peak)**

Based on the established significance criteria, **seven significant cumulative impacts** were calculated with the addition of Alternative 2 traffic on study area freeway segments since the Proposed Action alternative-induced change in V/C is greater than 0.01 for LOS E operating freeway segments and greater than 0.005 for LOS F operating freeway segments

Appendix Y contains the detailed HCS calculations sheets for the Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) scenario.

18.4 Peak Hour Ramp Meter Operations

The Moore Street / NB I-5 On-ramp meter was analyzed under Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%) conditions. ***Table 18–5*** reports the

Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%) conditions ramp meter operations.

- **Ramp Meter #1. Moore Street / I-5 NB On-ramp** – Delays of 10/17 minutes and queues of 55/90 vehicles during the a.m. / p.m. peak hours are calculated.at the *Moore Street / NB I-5 On-Ramp* under Near-Term Year 2030 with Alternative 2: Higher-density Mixed-Use Revitalization (25%) conditions.

Based on the established significance criteria, **one (1) significant cumulative impact** was calculated with the addition of Alternative 2: Higher-density Mixed-use Revitalization (25%) traffic at the location **bolded and underlined** above since the total delay at this on ramp is more than 15 minutes during the p.m. peak hour and the increase in delay due to the Proposed Action traffic is greater than 2.0 minutes during the a.m. and p.m. peak hours

TABLE 18–1
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030		Near-Term Year 2030 w/ Alternative 2 (25%)		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
1. Taylor St/ Hotel Circle South	AWSC [d]	AM PM	10.4 17.2	B C	10.6 17.3	B C	0.2 0.1	No
2. Taylor St/ I-8 EB Ramps	Signal	AM PM	14.4 24.1	B C	15.1 25.8	B C	0.7 1.7	No
3. Taylor St/ Morena Blvd/Whitman St	Signal	AM PM	16.1 12.9	B B	16.8 13.5	B B	0.7 0.6	No
4. Taylor St/ Juan St	Signal	AM PM	12.9 30.0	B C	13.0 30.2	B C	0.1 0.2	No
5. Congress St/ Taylor St	Signal	AM PM	8.6 17.9	A B	8.6 18.0	A B	0.0 0.1	No
6. Pacific Hwy/ Rosecrans St/ Taylor St	Signal	AM PM	54.6 71.9	D E	**58.5** **83.4**	**E** **F**	**3.9** **11.5**	**Yes**
7. Rosecrans St/ Jefferson St	TWSC [e]	AM PM	20.5 62.2	C F	20.7 **63.8**	C **F**	0.2 **1.6**	**Yes**
8. Camino Del Rio W/ Hancock St	Signal	AM PM	43.3 71.4	D E	43.9 72.0	D E	0.6 0.6	No
9. Camino Del Rio W/ Kurtz St	Signal	AM PM	9.9 25.9	A C	10.0 25.6	A C	0.1 -0.3	No
10. Rosecrans St/ Kurtz St	Signal	AM PM	11.6 24.2	B C	12.0 24.3	B C	0.4 0.1	No
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Signal	AM PM	16.7 48.0	B D	19.4 51.2	B D	2.7 3.2	No
12. Rosecrans St/ Midway Dr	Signal	AM PM	34.6 49.9	C D	34.7 52.4	C D	0.1 2.5	No
13. Rosecrans St/ Lytton St	Signal	AM PM	51.2 54.9	D D	54.5 **58.1**	D **E**	3.3 **3.2**	**Yes**
14. Truxtun Rd/ Lytton St/Barnett Ave	Signal	AM PM	43.1 78.2	D E	43.2 **80.3**	D **F**	0.1 **2.1**	**Yes**
15. Midway Dr/ Enterprise St	Signal	AM PM	14.7 15.7	B C	16.3 19.5	C C	1.6 3.8	No
16. Barnett Ave/ Midway Dr	Signal	AM PM	8.3 10.4	A B	8.7 12.3	A B	0.4 1.9	No

(Continued on Next Page)

TABLE 18–1
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030		Near-Term Year 2030 w/ Alternative 2 (25%)		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued From Previous Page)								
17. Pacific Hwy/ Telegraph Pl	Signal	AM PM	11.3 11.2	B B	11.3 11.3	B B	0.0 0.1	No
18. Pacific Hwy/ Kurtz St	Signal	AM PM	26.3 106.3	D F	**46.7** **217.9**	**E** **F**	**20.4** **111.6**	**Yes**
19. Sports Arena Blvd/ Pacific Hwy	Signal	AM PM	12.8 85.1	B F	15.7 **177.2**	C **F**	2.9 **92.1**	**Yes**
20. Pacific Hwy/ Enterprise St	Signal	AM PM	84.5 119.8	F F	**104.2** **151.1**	**F** **F**	**19.7** **31.3**	**Yes**
21. Pacific Hwy/ Barnett Ave	Grade Separated	AM PM	*No Control Delay*					No
22. Old Town Ave/ San Diego Ave	Signal	AM PM	30.3 17.3	C B	31.8 17.7	C B	1.5 0.4	No
23. Old Town Ave/ Moore St	Signal	AM PM	118.1 63.9	F E	**359.3** **88.7**	**F** **F**	**241.2** **24.8**	**Yes**
24. Hancock St/Old Town Ave/ I-5 SB Off-Ramps	AWSC	AM PM	34.6 29.1	D D	**76.3** **49.4**	**F** **E**	**41.7** **20.3**	**Yes**
25. Witherby St/ Hancock St	AWSC	AM PM	16.1 27.1	C D	**37.2** **69.3**	**E** **F**	**21.1** **42.2**	**Yes**
26. Witherby St/ Pacific Hwy	AWSC	AM PM	14.0 46.1	B E	19.9 **108.3**	C **F**	5.9 **62.2**	**Yes**
27. Tripoli Ave/ Witherby St	AWSC	AM PM	9.9 15.3	A C	11.0 22.0	B C	1.1 6.7	No
28. Noell St/ Hancock St	AWSC	AM PM	13.3 20.6	B C	13.4 21.2	B C	0.1 0.6	No
29. Washington St/ San Diego Ave	Signal	AM PM	23.3 13.3	C B	23.4 13.4	C B	0.1 0.1	No
30. Washington St/ Hancock St	Signal	AM PM	23.7 29.0	C C	23.8 29.2	C C	0.1 0.2	No
31. Washington St/ Pacific Hwy (N)	Signal	AM PM	15.4 50.2	B D	15.5 50.3	B D	0.1 0.1	No
32. Washington St/ Pacific Hwy (S)	Signal	AM PM	13.0 16.8	B B	13.0 17.0	B B	0.0 0.2	No
(Continued on Next Page)								

TABLE 18–1
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term Year 2030		Near-Term Year 2030 w/ Alternative 2 (25%)		Delay Δ [c]	Sig?
			Delay [a]	LOS [b]	Delay	LOS		
(Continued from Previous Page)								
33. Pacific Hwy/ Sassafras St	Signal	AM	96.2	F	**98.1**	**F**	**1.9**	**Yes**
		PM	58.8	E	59.0	E	0.2	
34. Pacific Hwy / Laurel St	Signal	AM	62.6	E	63.0	E	0.4	No
		PM	78.4	E	79.1	E	0.7	
35. Harbor Dr / Laurel St	Signal	AM	52.6	D	53.1	D	0.5	No
		PM	58.6	E	59.4	E	0.8	
36. Pacific Hwy / Sea World Dr	Signal	AM	22.0	C	25.1	C	3.1	**Yes**
		PM	54.2	D	**64.4**	**E**	**10.2**	
37. Sea World Dr / I-5 SB Ramps	Signal	AM	19.9	B	20.0	B	0.0	No
		PM	22.2	C	22.3	C	0.1	
38. Sea World Dr / I-5 NB Ramps	Signal	AM	40.0	D	40.1	D	0.1	No
		PM	57.8	E	57.9	E	0.1	
39. Morena Blvd / Linda Vista Rd	Signal	AM	16.6	B	16.8	B	0.2	No
		PM	23.3	C	23.7	C	0.4	

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes the increase in delay due to Proposed Action.
d. All-Way Stop Control. Average delay reported.
e. Two-Way Stop Control. Worst critical movement delay reported.

General Notes:
1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

SIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS	UNSIGNALIZED DELAY/LOS THRESHOLDS Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 18–2
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Near-Term Year 2030			Near-Term Year 2030 w/ Alternative 2 (25%)			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
Rosecrans Street										
1. Dewey Rd to Lytton St	37,500	53,770	F	1.434	**54,370**	**F**	**1.450**	**0.016**	**600**	**Yes**
2. Lytton St to Midway Dr	50,000	52,090	F	1.042	**52,690**	**F**	**1.054**	**0.012**	**600**	**Yes**
3. Midway Dr to Sports Arena Blvd	50,000	60,340	F	1.207	**61,890**	**F**	**1.238**	**0.031**	**1,550**	**Yes**
4. Sports Arena Blvd to Kurtz St	30,000	25,090	E	0.836	**26,290**	**E**	**0.876**	**0.040**	**1,200**	**Yes**
5. E: Kurtz St to Pacific Hwy	30,000	17,430	C	0.581	17,670	C	0.589	0.008	240	No
Taylor Street										
6. Pacific Hwy to Congress St	45,000	18,720	B	0.416	19,920	B	0.443	0.027	1,200	No
7. Congress St to Juan St	45,000	16,190	A	0.360	17,390	A	0.386	0.026	1,200	No
8. Juan St to Presidio Dr	40,000	16,520	A	0.413	17,600	B	0.440	0.027	1,080	No
9. Presidio Dr to I-8 East Ramp	10,000	14,770	F	1.477	**15,490**	**F**	**1.549**	**0.072**	**720**	**Yes**
Hotel Circle S.										
10. I-8 East Ramp to Bachman Pl	15,000	8,990	C	0.599	8,990	C	0.599	0.000	0	No
Pacific Highway										
11. SeaWorld Dr to Taylor St	15,000	10,380	D	0.692	11,580	D	0.772	0.080	1,200	No
12. Taylor St to Kurtz St	50,000	14,690	A	0.294	16,840	A	0.337	0.043	2,150	No
13. Kurtz St to Sports Arena Blvd	50,000	27,800	B	0.556	35,330	C	0.707	0.151	7,530	No
14. Sports Arena Blvd to Barnett Ave	50,000	31,540	C	0.631	35,840	C	0.717	0.086	4,300	No
15. Barnett Ave to Witherby St	80,000	74,320	E	0.929	**81,250**	**F**	**1.016**	**0.087**	**6,930**	**Yes**
16. Witherby St to W. Washington St	80,000	71,970	E	0.900	**76,150**	**E**	**0.952**	**0.052**	**4,180**	**Yes**
17. W. Washigton St to Sassafras St	60,000	22,010	A	0.367	25,600	B	0.427	0.060	3,590	No
18. Sassafras St to W. Laurel St	50,000	19,830	A	0.397	20,310	B	0.406	0.009	480	No
Morena Boulevard										
19. Friars Rd to I-8	40,000	42,890	F	1.072	43,250	F	1.081	0.009	360	No
Linda Vista Road										
20. Morena Blvd to Colusa St	30,000	27,760	E	0.925	28,000	E	0.933	0.008	240	No
Kurtz Street										
21. Rosecrans to Pacific Hwy	8,000	13,920	F	1.740	**14,880**	**F**	**1.860**	**0.120**	**960**	**Yes**
Sports Arena Blvd										
22. Midway Dr to Kemper St	37,500	21,420	C	0.571	21,780	C	0.581	0.010	360	No
23. Kemper St to East Dr	45,000	24,070	B	0.535	24,550	C	0.546	0.011	480	No
24. East Dr to Rosecrans St	45,000	26,690	C	0.593	27,290	C	0.606	0.013	600	No
25. Rosecrans St to Enterprise St	8,000	2,810	B	0.351	3,110	B	0.389	0.038	300	No
Midway Drive										
26. East Dr to Rosecrans St	30,000	33,880	F	1.129	34,120	F	1.137	0.008	240	No
27. Rosecrans St to Bogley Dr	30,000	23,850	D	0.795	24,930	D	0.831	0.036	1,080	No
28. Bogley Dr to Barnett Ave	30,000	22,180	D	0.739	**25,230**	**E**	**0.841**	**0.102**	**3,050**	**Yes**
Lytton Street										
29. Rosecrans St to St. Charles St	30,000	28,670	E	0.956	29,150	E	0.972	0.016	480	No

(Continued on Next Page)

TABLE 18–2
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Near-Term Year 2030			Near-Term Year 2030 w/ Alternative 2 (25%)			V/C Δ [d]	Δ Project	Sig?
		ADT	LOS [b]	V/C [c]	ADT	LOS	V/C			
(Continued from Previous Page)										
Barnett Avenue										
30. St. Charles St to Henderson Ave	30,000	29,730	E	0.991	**30,210**	**F**	**1.007**	**0.016**	**480**	**Yes**
31. Henderson Ave to Pacific Hwy	30,000	31,730	F	1.058	**32,210**	**F**	**1.074**	**0.016**	**480**	**Yes**
Hancock Street										
32. Old Town Ave to Witherby St	8,000	10,370	F	1.296	**13,000**	**F**	**1.625**	**0.329**	**2,630**	**Yes**
33. Witherby St to Noell St	8,000	5,010	D	0.626	5,130	D	0.641	0.015	120	No
34. Noell St to W. Washington St	8,000	16,820	F	2.103	16,820	F	2.103	0.000	0	No
W. Washington Street										
35. Admiral Boland Way to Pacific Hwy	8,000	18,900	F	2.363	18,900	F	2.363	0.000	0	No
36. Pacific Hwy to Hancock St	40,000	22,910	C	0.573	23,510	C	0.588	0.015	600	No
37. Hancock St to W. University Ave	40,000	29,430	C	0.736	30,030	D	0.751	0.015	600	No

Footnotes:

a. The capacity of the roadway at Level of Service E.
b. Level of Service.
c. The Volume to Capacity ratio.
d. Increase in V/C ratio due to the addition of Proposed Action traffic.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and shading represent a significant impact.

TABLE 18–3
NEAR TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Near Term Year 2030							Near-Term Year 2030 with Alternative 2: Higher-Density Mixed-used Revitalization (25%)							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	201,820	6,380	1,170	2,160	0.542	19.0	C	202,420	6,453	1,183	2,160	0.548	19.2	C	0.006	No
	SB	5 Main + 1 Aux		7,750	1,421	2,160	0.658	23.1	C		7,791	1,428	2,160	0.661	23.3	C	0.003	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	216,460	7,330	1,623	2,133	0.761	27.2	D	217,510	7,459	1,651	2,133	0.774	27.9	D	0.013	No
	SB	5 Main		8,340	1,846	2,245	0.822	31.4	D		8,411	1,862	2,245	0.829	31.8	D	0.007	No
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	211,710	7,170	1,587	2,130	0.745	26.5	D	211,710	7,170	1,587	2,130	0.745	26.5	D	0.000	No
	SB	4 Main + 1 Aux		8,160	1,807	2,133	0.847	32.0	D		8,160	1,807	2,133	0.847	32.0	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	162,740	5,510	1,525	2,237	0.682	25.0	C	162,740	5,510	1,525	2,237	0.682	25.0	C	0.000	No
	SB	4 Main		6,270	1,735	2,245	0.773	28.8	D		6,270	1,735	2,245	0.773	28.8	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	167,850	5,690	1,575	2,237	0.704	25.9	C	167,850	5,690	1,575	2,237	0.704	25.9	C	0.000	No
	SB	4 Main		6,470	1,790	2,241	0.799	30.2	D		6,470	1,790	2,241	0.799	30.2	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	220,740	7,480	1,656	2,126	0.779	28.2	D	221,990	7,565	1,675	2,126	0.788	28.7	D	0.009	No
	SB	4 Main + 1 Aux		8,500	1,882	2,130	0.884	34.5	D		**8,653**	**1,916**	**2,130**	**0.900**	**35.7**	**E**	**0.016**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	230,600	7,810	1,590	2,119	0.750	26.9	D	231,850	7,895	1,748	2,119	0.825	30.8	D	0.075	No
	SB	4 Main + 1 Aux		8,880	1,966	2,112	0.931	38.2	E		**9,033**	**2,000**	**2,112**	**0.947**	**39.6**	**E**	**0.016**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	192,620	6,530	1,807	2,216	0.815	31.5	D	193,870	6,615	1,831	2,216	0.826	32.1	D	0.011	No
	SB	4 Main		7,420	2,054	2,220	0.925	38.4	E		**7,573**	**2,096**	**2,220**	**0.944**	**39.8**	**E**	**0.019**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	252,110	8,540	1,891	2,216	0.853	33.6	D	253,260	8,618	1,908	2,216	0.861	34.1	D	0.008	No
	SB	5 Main		9,710	2,150	2,213	0.972	42.2	E		**9,851**	**2,181**	**2,213**	**0.986**	**43.5**	**E**	**0.014**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	230,910	7,820	1,731	2,216	0.781	29.8	D	231,960	7,891	1,747	2,216	0.788	30.1	D	0.007	No
	SB	5 Main		8,900	1,970	2,216	0.889	35.8	E		**9,029**	**1,999**	**2,216**	**0.902**	**36.7**	**E**	**0.013**	**Yes**
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	107,850	3,550	970	2,248	0.431	15.6	B	108,000	3,560	973	2,248	0.433	15.6	B	0.001	No
	WB	4 Main		4,500	1,230	2,259	0.544	19.4	C		4,518	1,235	2,259	0.547	19.5	C	0.002	No
12. I-5 to Morena Blvd	EB	4 Main	136,530	3,990	1,090	2,241	0.486	17.7	B	137,130	4,063	1,110	2,241	0.495	18.0	B	0.009	No
	WB	3 Main		5,630	2,052	2,248	0.913	37.3	E		5,671	2,067	2,248	0.919	37.8	E	0.007	No

(Continued on Next Page)

TABLE 18–3
NEAR TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
FREEWAY SEGMENT OPERATIONS – AM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Near Term Year 2030							Near-Term Year 2030 with Alternative 2: Higher-Density Mixed-used Revitalization (25%)							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB WB	4 Main + 1 Aux 5 Main	208,900	6,110 8,620	1,336 1,885	2,126 1,948	0.628 0.968	21.9 41.1	C E	209,500	6,183 8,661	1,352 1,894	2,126 1,948	0.636 0.972	22.1 41.6	C E	0.008 0.005	No No
14. Taylor St to Hotel Circle	EB WB	4 Main 5 Main	207,070	6,050 8,540	1,654 1,867	2,229 2,237	0.742 0.835	27.7 32.2	D D	207,970	6,160 8,601	1,684 1,881	2,229 2,237	0.755 0.841	28.3 32.6	D D	0.013 0.006	No No
15. Hotel Circle to SR-163	EB WB	4 Main 5 Main	222,800	6,510 9,190	1,778 2,008	2,229 2,229	0.798 0.901	30.3 36.5	D E	223,700	6,620 9,251	1,808 2,021	2,229 2,229	0.811 0.907	31.0 36.9	D E	0.013 0.006	No No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Notes:

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

Table 18–4
Near Term Year 2030 with Alternative 2 (25%)
Freeway Segment Operations – PM Peak Hour

Freeway and Segment	Dir	# of Lanes [a]	Near Term Year 2030 ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	Near-Term Year 2030 with Alternative 2: Higher-Density Mixed-used Revitalization (25%) ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS	Δ (V/C) [f]	Sig?
Intersection 5																		
1. Sea World to I-8	NB	5 Main + 1 Aux	201,820	6,340	1,162	2,160	0.538	18.9	C	202,420	6,395	1,172	2,160	0.543	19.1	C	0.005	No
	SB	5 Main + 1 Aux		8,960	1,643	2,160	0.761	27.5	D		9,048	1,659	2,160	0.768	27.9	D	0.007	No
2. I-8 to Old Town Ave	NB	4 Main + 1 Aux	216,460	7,820	1,731	2,133	0.812	29.9	D	217,510	7,917	1,753	2,133	0.822	30.5	D	0.010	No
	SB	5 Main		8,330	1,844	2,245	0.821	31.4	D		8,484	1,878	2,245	0.837	32.2	D	0.015	No
3. Old Town Ave to Washington St	NB	4 Main + 1 Aux	211,710	7,640	1,692	2,130	0.794	29.0	D	211,710	7,640	1,692	2,130	0.794	29.0	D	0.000	No
	SB	4 Main + 1 Aux		8,150	1,804	2,133	0.846	31.9	D		8,150	1,804	2,133	0.846	31.9	D	0.000	No
4. Washington St to Sassafras St	NB	4 Main	162,740	5,880	1,627	2,237	0.727	26.8	D	162,740	5,880	1,627	2,237	0.727	26.8	D	0.000	No
	SB	4 Main		6,260	1,732	2,245	0.771	28.8	D		6,260	1,732	2,245	0.771	28.8	D	0.000	No
5. Sassafras St to Pacific Hwy Viaduct	NB	4 Main	167,850	6,060	1,677	2,237	0.750	27.9	D	167,850	6,060	1,677	2,237	0.750	27.9	D	0.000	No
	SB	4 Main		6,460	1,788	2,241	0.798	30.2	D		6,460	1,788	2,241	0.798	30.2	D	0.000	No
6. Pacific Hwy Viaduct to Laurel St	NB	4 Main + 1 Aux	220,740	7,970	1,765	2,126	0.830	31.0	D	221,990	8,153	1,805	2,126	0.849	32.2	D	0.019	No
	SB	4 Main + 1 Aux		8,500	1,882	2,130	0.884	34.5	D		**8,615**	**1,907**	**2,130**	**0.895**	**35.4**	**E**	**0.012**	**Yes**
7. Laurel St to Hawthorn St	NB	4 Main + 1 Aux	230,600	8,330	1,844	2,119	0.870	33.6	D	231,850	8,513	1,885	2,119	0.890	35.0	D	0.019	No
	SB	4 Main + 1 Aux		8,880	1,966	2,112	0.931	38.2	E		**8,995**	**1,991**	**2,112**	**0.943**	**39.3**	**E**	**0.012**	**Yes**
8. Hawthorn St to 1st Ave	NB	4 Main	192,620	6,950	1,924	2,216	0.868	34.5	D	193,870	**7,133**	**1,974**	**2,216**	**0.891**	**36.0**	**E**	**0.023**	**Yes**
	SB	4 Main		7,410	2,051	2,220	0.924	38.3	E		**7,525**	**2,082**	**2,220**	**0.938**	**39.4**	**E**	**0.014**	**Yes**
9. 1st Ave to 6th Ave	NB	5 Main	252,110	9,100	2,015	2,216	0.909	37.2	E	253,260	**9,268**	**2,052**	**2,216**	**0.926**	**38.4**	**E**	**0.017**	**Yes**
	SB	5 Main		9,700	2,148	2,213	0.971	42.2	E		**9,806**	**2,171**	**2,213**	**0.981**	**43.2**	**E**	**0.010**	**Yes**
10. 6th Ave to SR-163	NB	5 Main	230,910	8,340	1,846	2,216	0.833	32.4	D	231,960	8,494	1,881	2,216	0.849	33.4	D	0.016	No
	SB	5 Main		8,890	1,968	2,216	0.888	35.8	E		8,987	1,990	2,216	0.898	36.4	E	0.010	No
Intersection 8																		
11. W. Mission Bay Dr/Midway to I-5	EB	4 Main	107,850	2,770	757	2,248	0.337	12.2	B	108,000	2,792	763	2,248	0.339	12.3	B	0.003	No
	WB	4 Main		4,330	1,184	2,259	0.524	18.7	C		4,344	1,188	2,259	0.526	18.7	C	0.002	No
12. I-5 to Morena Blvd	EB	4 Main	136,530	5,480	1,498	2,241	0.668	24.4	C	137,130	5,535	1,513	2,241	0.0675	24,6	C	0.007	No
	WB	3 Main		4,300	1,567	2,248	0.697	25.4	C		4,388	1,599	2,248	0.711	26.0	C	0.014	No

(Continued on Next Page)

TABLE 18–4
NEAR TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
FREEWAY SEGMENT OPERATIONS – PM PEAK HOUR

Freeway and Segment	Dir	# of Lanes [a]	Near Term Year 2030							Near-Term Year 2030 with Alternative 2: Higher-Density Mixed-used Revitalization (25%)							Δ (V/C) [f]	Sig?
			ADT	Peak Hour Volume[b]	Flow (pc/h/ln) [c]	Adj. Capacity (pc/h/ln) [d]	V/C [e]	Density [f]	LOS [g]	ADT	Peak Hour Volume	Flow (pc/h/ln)	Adj. Capacity (pc/h/ln)	V/C	Density	LOS		
(Continued from Previous Page)																		
13. Morena Blvd to Hotel Circle/Taylor St	EB	4 Main + 1 Aux	208,900	8,380	1,832	2,126	0.862	33.0	D	209,500	8,435	1,844	2,126	0.867	33.4	D	0.006	No
	WB	5 Main		6,580	1,439	1,948	0.739	24.5	C		6,668	1,458	1,948	0.748	25.0	C	0.010	No
14. Taylor St to Hotel Circle	EB	4 Main	207,070	8,300	2,269	2,229	1.018	—	F	207,970	**8,383**	**2,292**	**2,229**	**1.028**	—	**F**	**0.010**	**Yes**
	WB	5 Main		6,520	1,426	2,237	0.637	23.3	C		6,652	1,455	2,237	0.650	23.8	C	0.013	No
15. Hotel Circle to SR-163	EB	4 Main	222,800	8,930	2,438	2,229	1.094	—	F	223,700	**9,013**	**2,461**	**2,229**	**1.104**	—	**F**	**0.010**	**Yes**
	WB	5 Main		7,020	1,533	2,229	0.688	25.4	C		7,152	1,562	2,229	0.701	25.9	C	0.013	No

Footnotes:

a. Mainline SOV lane geometry taken from PeMS lane configurations at corresponding postmile and validated against field observations.
b. See *Table 6–3* for K and D factors.
c. Passenger-car equivalent flow rate for peak 15-minute period (passenger-cars/hour/lane).
d. Per lane capacity adjusted for freeway segment geometry (passenger-cars/hour/lane).
e. V/C = (Peak Hour Volume/Hourly Capacity)
f. Density measures passenger cars per mile per lane. Density = Flow Rate (passenger-cars/hour/lane) ÷ Speed (average passenger-car speed in mph).
g. Level of Service
h. "Δ" denotes the Proposed Action-induced increase in V/C. Per City Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E and 0.005 for LOS F.

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

General Note:s

1. M = Mainline
2. A = Auxiliary
3. Sig? = Significant impact, yes or no. **Bold** typeface and shading represent a significant impact.
4. "—" Indicates density exceeds the maximum threshold for LOS F.

TABLE 18–5
NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%)
RAMP METER OPERATIONS

Location / Condition	Peak Hour	Peak Hour Flow (D) (veh/hr/ln) [a]	Calculated (Most Restrictive)				
			Discharge Rate (R) (veh/hr/ln) [b]	Excess Demand (E) (veh/hr/ln) [c]	Delay (min/ln) [d]	Queue [e]	
						Feet	Vehicles
1. Moore Street / NB I-5 On-Ramp							
Near-Term Year 2030						2 SOV	
	AM	325	335	0	0	0	0
	PM	360	318	42	8	1,050	42
Near-Term Year 2030 with Alternative 2 (25%)						2 SOV	
	AM	390	335	55	10	1,363	55
	PM	408	318	90	17	2,250	90
Δ	**AM**			**55**	**10**	**1,363**	**55**
	PM			**48**	**9**	**1,200**	**48**

Footnotes:

a. Peak Hour Flow "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.

b. Discharge Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (See *Appendix B* for the ramp meter data obtained from Caltrans).

c. Excess Demand "E" is the difference between the Peak Hour Flow and the Discharge Rate.

d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.

e. Queue per lane is reported in feet and is calculated as 25 feet per vehicle.

General Notes:

1. SOV – Single Occupancy Vehicle Lane
2. Δ – Increase in delay and queue length due to the Proposed Action.
3. **Bold** typeface and shading represent a significant impact.

18.5 Significant Impacts and Mitigation Measures

Year 2030 Alternative 2 (25%) results significant direct impacts under this Proposed Action alternative. Year 2030 Alternative 2: Higher-density Mixed-use Revitalization (25%) would have significant direct impacts at **13** intersections, **12** street segments, **seven (7)** freeways segments, and **one (1)** freeway ramp meter.

Physical mitigation measures are recommended for locations impacted by the Proposed Action alternative to reduce impacts to less than significant. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange that would improve access to the OTC Site as well as reduce area traffic on local streets. This network improvement is proposed as mitigation for several impacted locations. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (only under the Alternative 4 and Alternative 5 scenarios where the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. A concept plan showing this improvement is depicted later on in *Section 29.0* of this report.

For locations where improvements have been deemed unavoidable either due to physical constraints, right-of-way constraints, or jurisdictional constraints and where the reconstructed interchange would not fully mitigate, it is recommended that the Proposed Action alternative contribute to the implementation of Transportation Systems Management (TSM) technology to improve traffic operations along various corridors. The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS is a fully responsive system that can be used to benefit all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles. The recommendation to contribute to implementation of ITS measures for locations where significant impacts are unavoidable is included below.

Additionally, implementation of Transportation Demand Management (TDM) measures by individual projects within the OTC Site as they are developed would reduce vehicular traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A TDM plan is a valuable tool to reducing single-occupancy vehicle (SOV) trips and therefore recommended for the Proposed Action alternatives. Further details on TDM and TSM measures are provided later on in *Sections 27.0 and 28.0* of this report, respectively.

Table 18–5 lists the significantly impacted locations and proposed mitigation measures.

Figure 18–1 shows an illustration of the significantly impacted locations.

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
INTERSECTIONS					
Year 2030 Alt 2-I-1	6	Pacific Hwy/ Rosecrans St/ Taylor St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes to provide a second southbound left-turn lane, a westbound right-turn overlap phase, and a second northbound right-turn lane. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-I-2	7	Rosecrans St/ Jefferson St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Installation of a traffic signal at this intersection would improve operations at this intersection. However, the intersection is located within close proximity to the Rosecrans Street/Taylor Street/ Pacific Highway signalized intersection (350 feet) which would be less than ideal for installing a signal and it would not be expected that the intersection would meet signal warrants given the very low minor street volumes on Jefferson Street. The provision of an additional signal on this segment of Rosecrans Street where heavy through traffic is observed would not be beneficial to the major street traffic flow. Based on these findings, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-I-3	13	Rosecrans St/ Lytton St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection. The Community Plan proposes right-turn overlap phasing in the northbound, southbound, and westbound directions. A second eastbound left-turn lane is proposed. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 18–5

YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-I-4	14	Truxtun Rd/ Lytton St/ Barnett Ave	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. Constructing an eastbound dedicated right-turn lane within the existing curb-to-curb width would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-I-5	18	Pacific Hwy/ Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to signalize the intersection and allow eastbound left-turn movements. With the improvements proposed at this intersection, the Community Plan reports high LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Community Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-I-6	19	Sports Arena Blvd/ Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to relocate the intersection 500 feet to the north of its current location. Improvements to realign Sports Arena Boulevard to create a right-angle with Pacific Highway are planned, as well as signalizing the intersection, providing an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway and providing a northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard. With the improvements proposed at this intersection, the Community Plan reports LOS C results. With the additional traffic added by the Proposed Action alternative, acceptable LOS operations would continue to occur. Therefore, it is recommended the Proposed Action alternative implement the Community Plan improvements to mitigate the impact to below a level of significance.	Yes

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-I-7	20	Pacific Hwy/ Enterprise St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan at this intersection. This intersection currently serves as an access point for the existing NAVWAR OTC Site. With future development of the Proposed Action alternative, this intersection would likely be improved to provide additional lanes entering/exiting the site. However, additional lanes would be needed on Pacific Highway. Any widening to Pacific Highway would be infeasible due to lack of right-of-way. Therefore, the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-I-8	22	Old Town Ave/ San Diego Ave	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. The intersection is built out with regard to available right-of-way. Extra lanes on intersection approaches are needed to improve operations at this intersection. However, given the lack of available right-of-way, widening at this intersection is infeasible. Therefore, no improvements are recommended and the impact at this intersection remains significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-I-9	23	Old Town Ave/ Moore St	San Diego	Per the Old Town Community Plan, improvements are recommended at this intersection. The Community Plan recommends signal phasing be changed from permissive to protected and to add exclusive left-turn lanes on Old Town Avenue approaching the intersection. However, the Community Plan concludes there is no available right-of-way to complete the improvements. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Moore Street intersection that effectively operates as the I-5 North interchange with Old Town Avenue. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-I-10	24	Hancock St/ Old Town Ave/ I-5 SB Off-Ramps	San Diego	There are no planned improvements in the Old Town Community Plan at this intersection. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. Additional capacity would be added to the interchange that would improve operations at the Old Town Avenue/ Hancock Street intersection that effectively operates as the I-5 southbound off-ramp with Old Town Avenue and Hancock Street. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-I-11	25	Witherby St/ Hancock St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned at this intersection to reconfigure the existing geometry. The Community Plan proposes to widen the northbound approach to provide one shared through/right-turn lane and one shared through/left-turn lane. With the improvements proposed at this intersection, the Community Plan reports low LOS D results. However, the additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-I-12	33	Pacific Hwy/ Sassafras St	San Diego	Per the Airport Development Plan, improvements are recommended at this intersection. The Airport Development Plan recommends the addition of a second eastbound through lane and restriping the southbound approach to provide a left-turn lane, three through lanes, and a right-turn lane to add capacity to the intersection, though the additional capacity continued to result in LOS E operations rendering the impact not fully mitigated. In addition, it recommends a Class IV Cycle Track be striped on Pacific Highway. The additional traffic added by the Proposed Action alternative would degrade intersection operations to significant levels. Any improvements beyond those recommended in the Airport Development Plan are physically infeasible given the lack of available right-of-way. Therefore, it is recommended the Proposed Action alternative implement the Airport Development Plan improvements, where feasible, and the impact at this intersection will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-I-13	36	Pacific Hwy / Sea World Dr	San Diego	There are no planned improvements in the Mission Bay Park Master Plan at this intersection. In order to improve operations at this intersection, the Proposed Action alternative should construct an additional southbound left-turn lane from SeaWorld Drive to eastbound Pacific Highway. Implementation of this improvement would mitigate the impact to below a level of significance.	Yes
STREET SEGMENTS					
		Rosecrans Street			
Year 2030 Alt 2-S-1	1	Dewey Rd to Lytton St	San Diego	Per the Peninsula Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a five-lane Collector with a center left-turn lane with a LOS E capacity of 37,500 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 2,500 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-S-2	2	Lytton St to Midway Dr	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes

TABLE 18–5

YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-S-3	3	Midway Dr to Sports Arena Blvd	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a six-lane Major Arterial with a LOS E capacity of 50,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-S-4	4	Sports Arena Blvd to Kurtz St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Rosecrans Street currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Taylor Street			
Year 2030 Alt 2-S-5	9	Presidio Dr to I-8 East Ramp	San Diego	There are no planned improvements in the Old Town Community Plan along this street segment. Additional lanes are needed on Taylor Street to increase the capacity along this roadway. However, due to the historic nature of the Old Town Community, the Community Plan does not propose any road widenings or significant capacity improvements. Additionally, there is not enough right-of-way available along this segment of Taylor Street to accommodate two additional through lanes and a center median while maintaining a Class II bicycle facility. Therefore, the impact would remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report and participate in the implementation of TSM measures described in *Section 28.0*. These measures will partially mitigate this significant impact.	No
		Pacific Highway			

TABLE 18–5

YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-S-6	15	Barnett Ave to Witherby St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-S-7	16	Witherby St to W. Washington St	San Diego	There are no planned improvements in the Midway-Pacific Highway Community Plan along this street segment. Additional lanes are needed on Pacific Highway to increase the capacity along this roadway. Widening Pacific Highway would be in conflict with the Community Plan. Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
		Kurtz Street			
Year 2030 Alt 2-S-8	21	Rosecrans to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Kurtz Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a two-lane Collector with a center left-turn lane with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Midway Drive			

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-S-9	28	Bogley Dr to Barnett Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Midway Drive currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Barnett Avenue			
Year 2030 Alt 2-S-10	30	St. Charles St to Henderson Ave	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a raised median with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Major Arterial with a LOS E capacity of 40,000 ADT. This results in an additional 10,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
Year 2030 Alt 2-S-11	31	Henderson Ave to Pacific Hwy	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Barnett Avenue currently functions as a four-lane Collector with a center left-turn lane with a LOS E capacity of 30,000 ADT. The Community Plan classifies this segment of the roadway as a six-lane Prime Arterial with a LOS E capacity of 60,000 ADT. This results in an additional 30,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance.	Yes
		Hancock Street			

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-S-12	32	Old Town Ave to Witherby St	San Diego	Per the Midway-Pacific Highway Community Plan, improvements are planned along this street segment to reconfigure the existing geometry. This segment of Hancock Street currently functions as a two-lane Collector with a LOS E capacity of 8,000 ADT. The Community Plan classifies this segment of the roadway as a four-lane Collector with a LOS E capacity of 15,000 ADT. This results in an additional 7,000 ADT of capacity over existing conditions. Implementation of the Community Plan improvements would mitigate the impact to below a level of significance. Alternatively, together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes
FREEWAYS					
Year 2030 Alt 2-F-1	6	I-5: Pacific Hwy Viaduct to Laurel St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-F-2	7	I-5: Laurel St to Hawthorn St	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-F-3	8	I-5: Hawthorn St to 1st Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-F-4	9	I-5: 1st Ave to 6th Ave	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-F-5	10	I-5: 6th Ave to SR-163	Caltrans	The SANDAG 2050 San Diego Forward: The Regional Plan identifies "operational improvements" along this freeway segment. The improvements are anticipated to be completed by the Year 2050, however, there is uncertainty to the actual improvements and sources of funding. Therefore, the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
Year 2030 Alt 2-F-6	14	I-8: Hotel Circle/Taylor St to Hotel Circle	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No
Year 2030 Alt 2-F-7	15	I-8: Hotel Circle to SR-163	Caltrans	An Interstate 8 Corridor Study (preliminary draft dated August 2016) was jointly prepared by SANDAG and Caltrans that analyzed transportation alternatives on I-8 between Nimitz Boulevard and Lake Murray Boulevard to meet future regional and local demand. The Corridor Study recommended several improvements on I-8 within the study area that included reconfiguration of on-ramps and off-ramps at Hotel Circle North and South, Taylor Street interchange among others. The Mission Valley Community Plan also includes several new roadways such as Street J, Street U and a new freeway overpass I-8. However, while both the Corridor Study and the Mission Valley Community Plan reviewed several conceptual alternatives, both studies did not include detailed engineering feasibility drawings, cost estimates or other analyses to ultimately identify a preferred alternative or improvement. Therefore, potential and unplanned freeway improvements are not physically feasible and the impact on this freeway segment will remain significant and unavoidable. Given that the impact at this location remains significant and unavoidable, it is recommended the Proposed Action alternative prepare a TDM plan as outlined in *Section 27.0* of this report to reduce overall vehicular traffic. These measures will partially mitigate this significant impact.	No

TABLE 18–5
YEAR 2030 WITH ALTERNATIVE 2 (25%) SIGNIFICANT IMPACTS AND MITIGATION MEASURES

ID	#	Location	Jur.	Mitigation Measures	Mit.? (Y/N)
RAMP METER					
Year 2030 Alt 2-R-1	1	Moore St/I-5 NB On-Ramp	Caltrans	Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. Additional capacity would be added to the interchange that would improve the queuing operations for vehicles destined to I-5 northbound. Construction of the interchange improvements would mitigate the impact to below a level of significance.	Yes

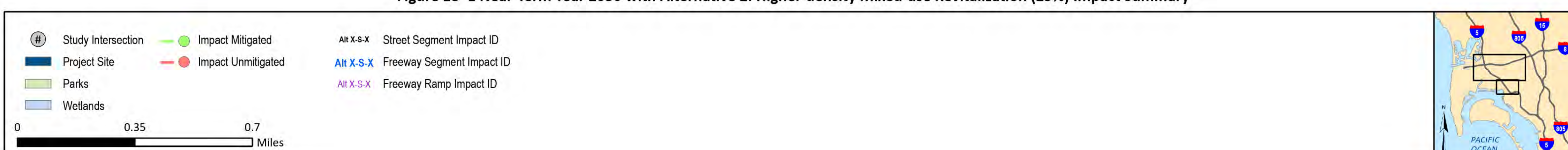
General Notes:

1. Jur. = Jurisdiction
2. Mit. = Mitigated Impact, yes or no?

IMPACTED INTERSECTION LIST

ID	Impact ID	ID	Impact ID
6	2030 Alt 2-1-1	22	2030 Alt 2-1-8
7	2030 Alt 2-1-2	23	2030 Alt 2-1-9
13	2030 Alt 2-1-3	24	2030 Alt 2-1-10
14	2030 Alt 2-1-4	25	2030 Alt 2-1-11
18	2030 Alt 2-1-5	33	2030 Alt 2-1-12
19	2030 Alt 2-1-6	36	2030 Alt 2-1-13
20	2030 Alt 2-1-7		

Figure 18–1 Near-Term Year 2030 with Alternative 2: Higher-density Mixed-use Revitalization (25%) Impact Summary



19.0 PEDESTRIAN MOBILITY

The Midway-Pacific Highway Community Plan envisions a public realm that provides attractive and comfortable pedestrian facilitates to connect communities and to improve the community's environment and image. Bicycle mobility will continue to evolve as a more viable option to auto use. The development of a safe, comfortable, and well-connected bicycle network that will make bicycling an attractive mode of transportation is the vision of the Midway-Pacific Highway Community Plan.

As part of this local pedestrian mobility assessment, the existing pedestrian facilities and key deficiencies within a ½ mile walking distance from the Proposed Action alternatives are documented, and the effects of the Proposed Action alternatives on the pedestrian network were evaluated.

19.1 Existing Pedestrian Conditions

A detailed pedestrian network inventory was conducted within a minimum of ½ mile walking distance from the Proposed Action alternatives site. ***Figure 19–1*** shows the existing pedestrian network in the area, which includes identifying dedicated pedestrian bridges missing sidewalks.

19.1.1 *Existing Pedestrian Demand*

Existing pedestrian counts were collected at the study intersections during the commuter a.m. and p.m. peak hours. The combined a.m. and p.m. pedestrian counts were calculated, and every study intersection was categorized as low activity, average activity, or high activity. This represents a measure of activity relative to the study area. ***Figure 19–2*** shows the existing pedestrian activity for the study area.

The following study intersections were observed as "high" pedestrian activity locations:

Intersection #5. Taylor Street / Congress Street
Intersection #6. Rosecrans Street / Taylor Street / Pacific Highway
Intersection #7. Rosecrans Street / Jefferson Street
Intersection #10. Rosecrans Street / Kurtz Street
Intersection #11. Rosecrans Street / Sports Arena Boulevard
Intersection #20. Pacific Highway / Enterprise Street
Intersection #22. Old Town Avenue / San Diego Avenue
Intersection #28. Hancock Street / Noell Street
Intersection #30. Washington Street / Hancock Street
Intersection #31. Pacific Highway (N) / Frontage Road / Washington Street

19.2 Planning Documents Review

A review of planning documents such as the *City of San Diego Pedestrian Master Plan*, *Midway-Pacific Highway Community Plan*, *Midway-Pacific Highway Impact Fee Study*, *Old Town San*

Diego Community Plan, Old Town San Diego Impact Fee Study, Capital Improvements Program and *Regional Transportation Improvement Program* was conducted.

Based on a review the planning documents, pedestrian sidewalk facilities are classified based on the pedestrian route type definitions as further described in ***Table 19–1***.

TABLE 19–1
PEDESTRIAN ROUTE TYPES

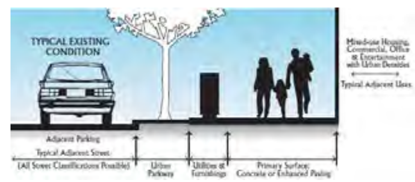
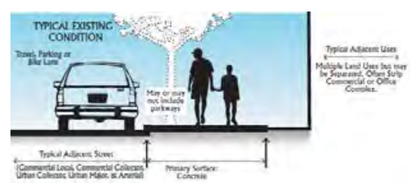
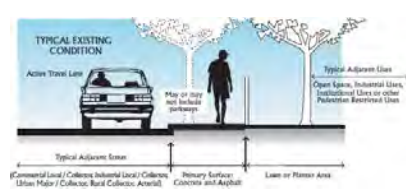
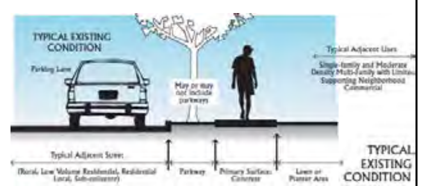
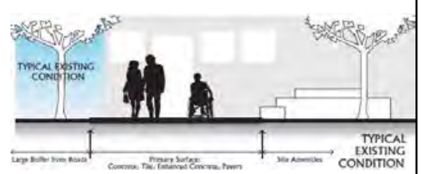
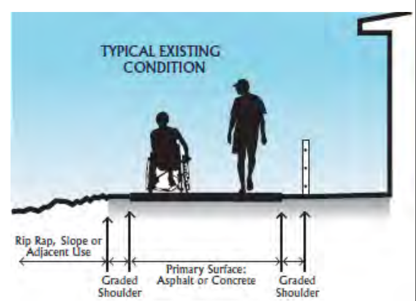
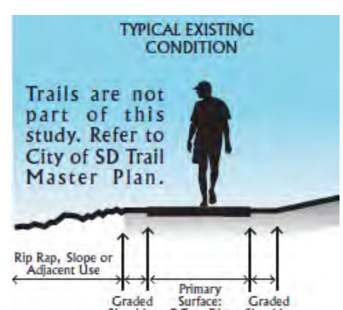
Class Description	Example Graphic
Route Type 1 - District Sidewalks District sidewalks run along roads that support heavy pedestrian levels in mixed-use concentrated urban areas. Usually, the district is an urbanized area with special functions, such as theater districts, office parks, shopping centers, or college campuses. The location of the district may be adjacent to neighborhoods, but these routes can be distinguished easily by adjacent uses, densities and urban form. It has an identifiable focus that provides orientation and character, and reinforces a sense of community among users by encouraging walking.	
Route Type 2 - Corridor Sidewalks Corridor sidewalks run along roads that support moderate density business and shopping districts with moderate pedestrian levels. They can range from wide walks along boulevards to small sidewalks along a heavily auto-oriented roadway. They may connect moderate to high-density residential areas, but only if they are located along major arterials.	
Route Type 3 - Connector Sidewalks Connector sidewalks tend to have low pedestrian levels and are along roads with moderate to high average vehicular traffic. Connector sidewalks tend to belong and, in some cases, do not have accessible land uses directly adjacent to the sidewalk. This can include sidewalks along major arterials that run parallel to open space and canyon lands. Often, they are along land uses that require buffering from the street noise, resulting in noise walls that further isolate the pedestrian from the adjacent land uses. These sidewalks have limited pedestrian use levels typically because of their remoteness and lack of nearby destinations. Often they can lead to nowhere, with the sidewalk stopping a distance away from other uses, typically where topography restricts the width of the road or where a development ends its improvements. Without the existence of these walkways, the pedestrian may be forced to walk in a high speed and high volume street.	
(continued on Next Page)	

TABLE 19–1
PEDESTRIAN ROUTE TYPES

Class Description	Example Graphic
(continued from Previous Page)	
Route Type 4 - Neighborhood Sidewalks Neighborhood sidewalks run along roads that support low to moderate density housing with low to moderate pedestrian levels. Neighborhood streets and their associated walkways are generally lower volume streets, with low to moderate widths, single lanes in each direction and posted (prima facie) speed limits of 25 miles per hour. They are not as difficult to cross as a pedestrian and pedestrian collisions occur less frequently because the driver has ample time to see, react and brake. Speeding on these streets does occur and can result in pedestrian collisions. However, most physical design changes are not as likely to reduce these pedestrian collisions since they result from careless behavior.	
Route Type 5 - Ancillary Pedestrian Facilities These are facilities away from or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways. Many of these ancillary facilities attract local residents and workers and therefore generate moderate to high pedestrian use.	
Route Type 6 – Paths Paths are paved facilities with exclusive right-of-ways that act as corridors and have little or no vehicular cross flows. Many of these paths are exclusive to pedestrians and bicycles and are not associated with streets. Paths defined by the Pedestrian Master Plan are often associated with recreational uses. Many of these paths can be found in parks, near open space preserves and away from streets in residential areas. They are defined in this plan as being paved, away from a street edge and not shared with vehicles (except for emergency or maintenance vehicles). They are often shared with runners, skaters, cyclists and other recreational users.	
Route Type 7 – Trails Trails are unpaved walkways or roads used for recreational use or open space maintenance are classified as Trails. Trails are separated from roads and support activities such as hiking, biking and walking primarily through parks and open space. They differ from paths in that they are not paved with concrete or asphalt. Only authorized vehicles are permitted to access these trails, which in many cases are not ADA-compliant. Trails are not included in this study, but are defined to present all levels of pedestrian walkways. The San Diego Trails Master Plan and other Park Master Plans should be consulted for guidance on unpaved trails.	

Source: Midway-Pacific Highway Community Plan

19.3 Recommended Pedestrian Network Improvements

Based on the review of the existing pedestrian network, planning documents and transportation impacts, two tiers of pedestrian improvements are recommended.

<u>Tier 1: The following are pedestrian improvement recommendations that shall be implemented by the Proposed Action alternatives as mitigation measures:</u>

P-1. Pacific Highway, between Old Town Transit Center Driveway and Witherby Street

- Upgrade the sidewalk classification on the east side of Pacific Highway, between Old Town Transit Center Driveway and Witherby Street to a corridor sidewalk classification for Proposed Action Alternatives 2 and 3 and district sidewalk classification for Proposed Action Alternative 4 and 5.

P-2. Sports Arena Boulevard, between Rosecrans Street and Pacific Highway

- Install missing sidewalks per connector sidewalk classification on both sides of Sports Arena Boulevard, between Rosecrans Street and Pacific Highway.

P-3. Midway Drive, between Rosecrans Street and Barnett Avenue

- Install missing sidewalks per connector or corridor sidewalk classifications on the north side of Midway Drive, between Rosecrans Street and Barnett Avenue.

P-4. Witherby Street, between Pacific Highway and Hancock Street

- Install missing sidewalks per connector sidewalk classification on the west side of Witherby Street, between Pacific Highway and Hancock Street.

P-5. Sports Arena Boulevard / Rosecrans Street Intersection

- Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-15 of the *Midway-Pacific Highway Community Plan* (see ***Appendix Z***). A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

P-6. Pacific Highway / Witherby Street Intersection

- Conduct a feasibility assessment of the pedestrian improvements shown Figure 3-16 of the *Midway-Pacific Highway Community Plan* (see *Appendix Z*). A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

P-7. Midway Drive / Enterprise Street Intersection

- Conduct a feasibility assessment of the pedestrian improvements described in Page 13 of the *Midway-Pacific Impact Fee Study* (see *Appendix Z*). A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

P-8. Barnett Avenue / Midway Drive Intersection

- Conduct a feasibility assessment of the pedestrian improvements shown in Figure 3-13 of the *Midway-Pacific Highway Community Plan* (see ***Appendix Z***). A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

<u>Tier 2: The following are pedestrian improvement recommendations that should be considered to enhance offsite accessibility within a ½ mile walking distance to the site:</u>

P-9. Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street.

- Install missing sidewalks per connector sidewalk classification on both sides of Hancock Street, between Old Town Avenue and approximately 440 feet east of Witherby Street.

P-10. Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street.

- Install missing sidewalks per connector sidewalk classification on the south side of Pacific Highway, between Tripoli Avenue and approximately 280 feet west of W. Washington Street.

P-11. Jessop Lane, between Enterprise Street and Barnett Avenue

- Install missing sidewalks on both sides of Jessop Lane, between Enterprise Street and Barnett Avenue.

P-12. Kurtz Street, between Rosecrans Street and Pacific Highway

- Install missing sidewalks per connector sidewalk classification on both sides of Kurtz Street, between Rosecrans Street and Pacific Highway.

P-13. Smith Street, between Pacific Highway and Kurtz Street

- Install missing sidewalks on both sides of Smith Street, Between Pacific Highway and Kurtz Street.

P-14. Old Town Transit Center Driveway

- Install missing sidewalks on south side of Old Town Transit Center Driveway off Pacific Highway.

Figure 19–3 shows the Tier 1 Recommended Pedestrian Improvements.

19.4 Other Recommendations

Walking is a fundamental component of the Proposed Action alternatives given the proposed mixed-land use characteristics as well as surrounding influences. It is also the most fundamental transportation mode since it is part of every trip. As such, it is recommended to prepare a Pedestrian Master Plan for the Proposed Action alternatives that will guide design and implementation of policies/programs to enhance access and mobility around and within the site for pedestrians of all ages and abilities.

The Pedestrian Master Plan would include, but is not limited to, the following elements:

- Design standards and guidance
- ADA Compliance
- Walkability and mobility
- Feasibility and social assessments
- Wayfinding
- Policies and programs

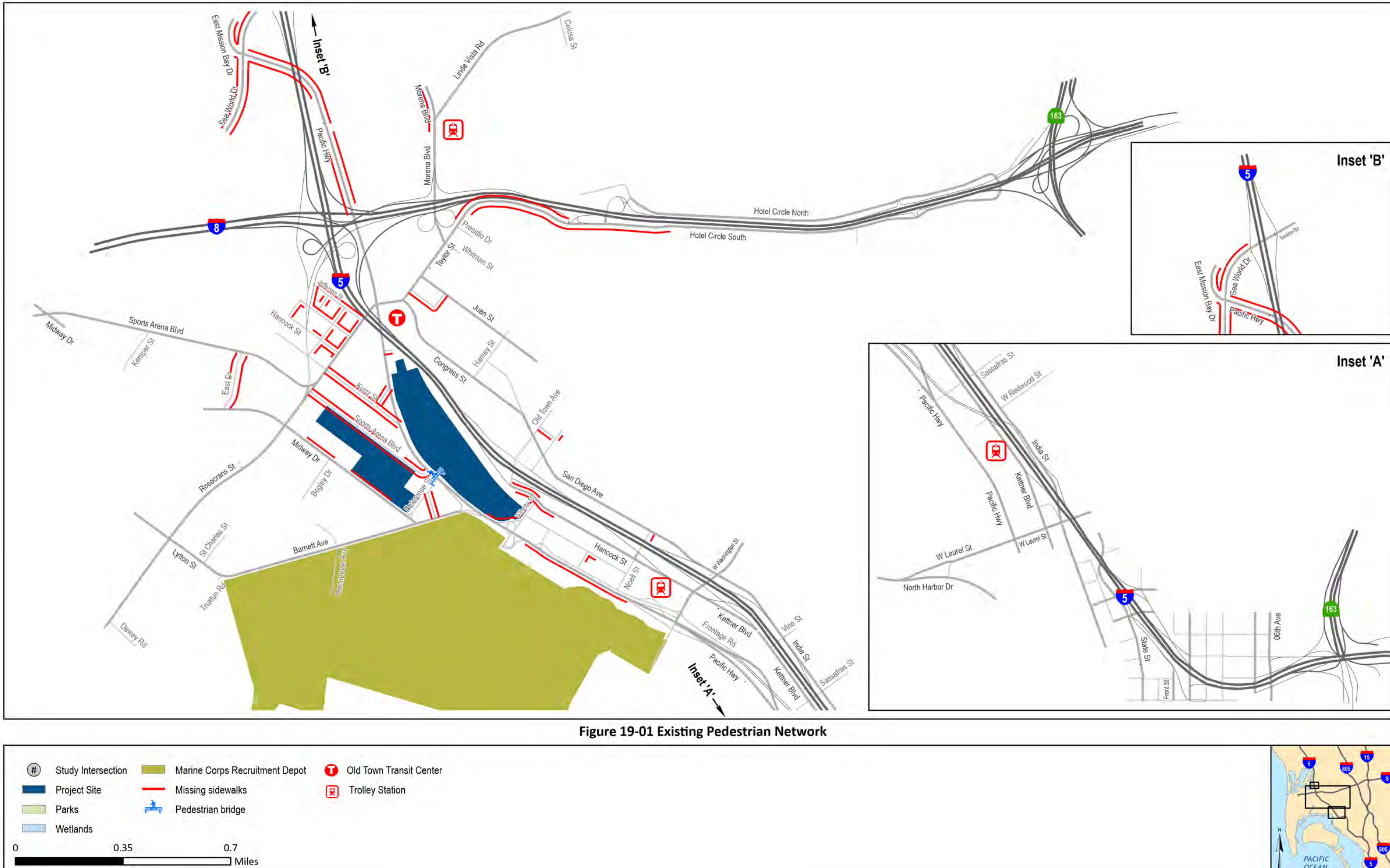


Figure 19-01 Existing Pedestrian Network

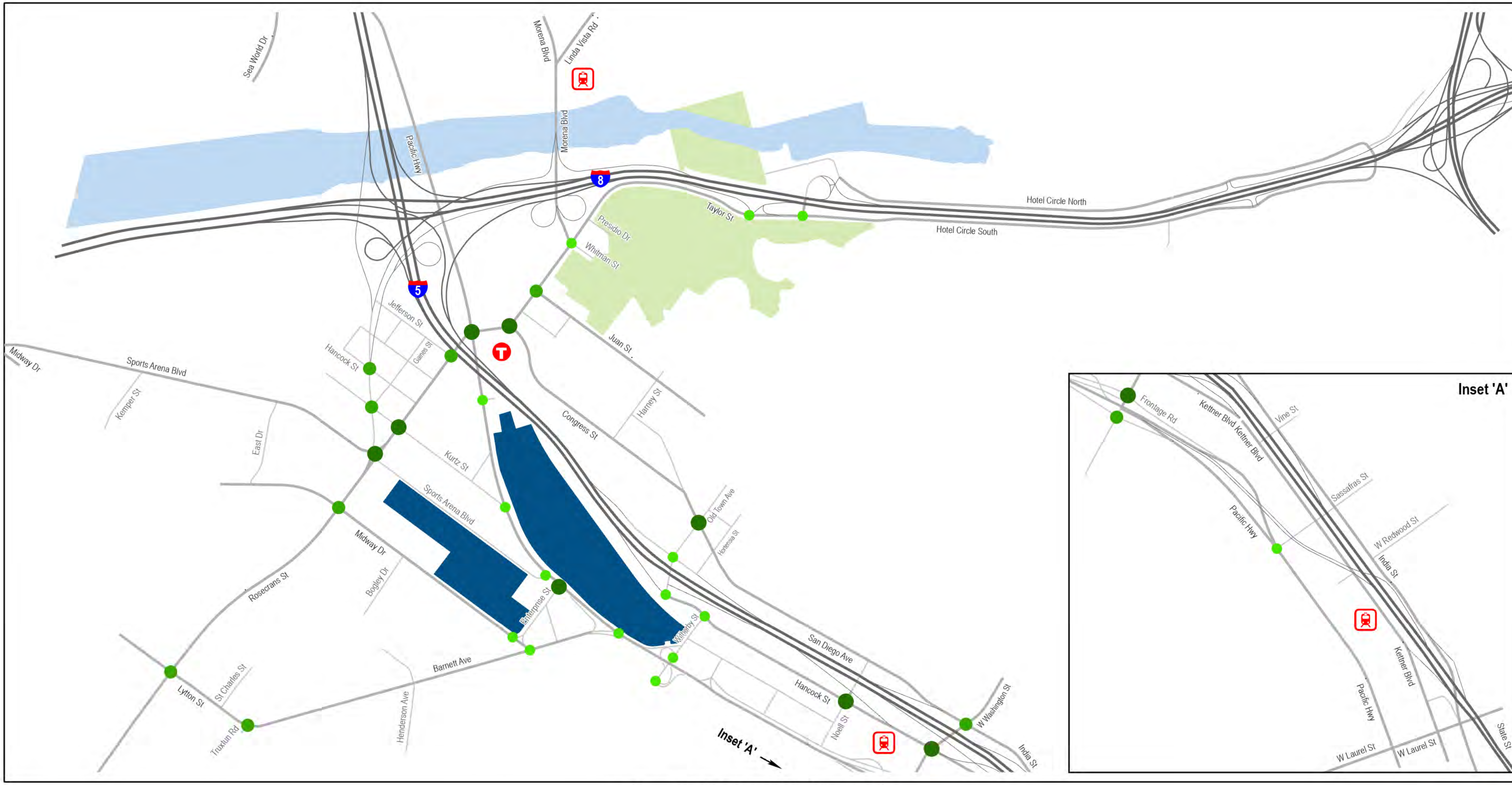
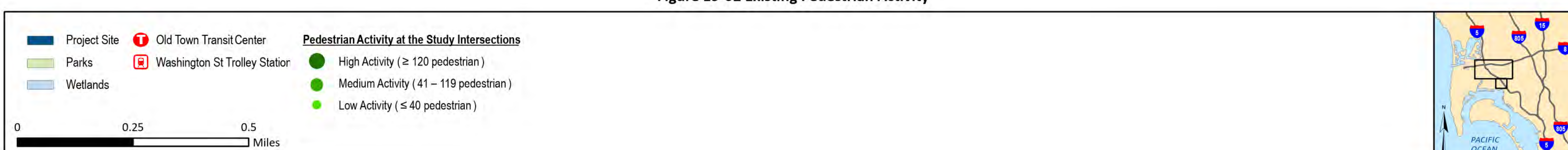
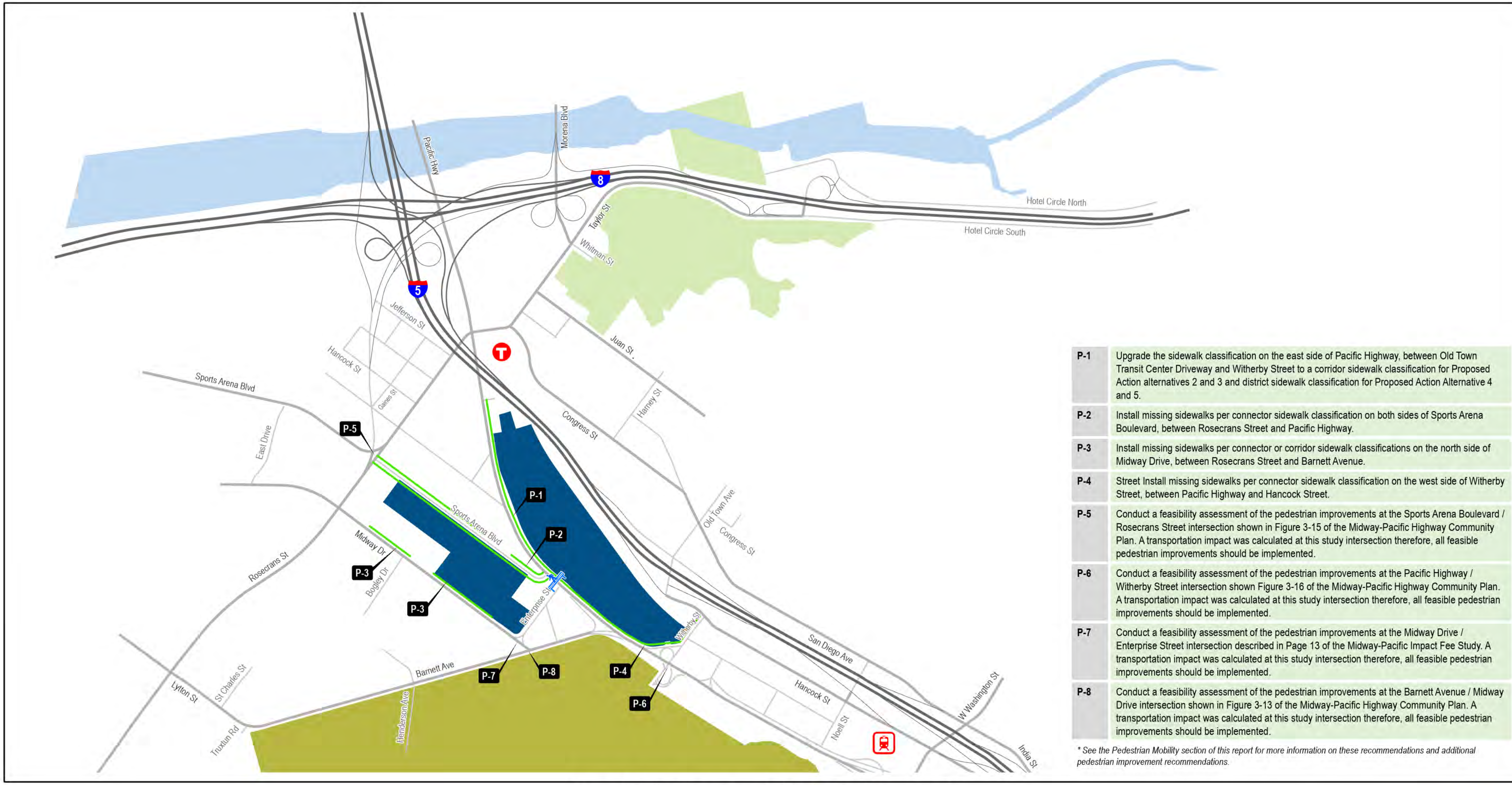


Figure 19-02 Existing Pedestrian Activity





P-1	Upgrade the sidewalk classification on the east side of Pacific Highway, between Old Town Transit Center Driveway and Witherby Street to a corridor sidewalk classification for Proposed Action alternatives 2 and 3 and district sidewalk classification for Proposed Action Alternative 4 and 5.
P-2	Install missing sidewalks per connector sidewalk classification on both sides of Sports Arena Boulevard, between Rosecrans Street and Pacific Highway.
P-3	Install missing sidewalks per connector or corridor sidewalk classifications on the north side of Midway Drive, between Rosecrans Street and Barnett Avenue.
P-4	Street Install missing sidewalks per connector sidewalk classification on the west side of Witherby Street, between Pacific Highway and Hancock Street.
P-5	Conduct a feasibility assessment of the pedestrian improvements at the Sports Arena Boulevard / Rosecrans Street intersection shown in Figure 3-15 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
P-6	Conduct a feasibility assessment of the pedestrian improvements at the Pacific Highway / Witherby Street intersection shown Figure 3-16 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
P-7	Conduct a feasibility assessment of the pedestrian improvements at the Midway Drive / Enterprise Street intersection described in Page 13 of the Midway-Pacific Impact Fee Study. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.
P-8	Conduct a feasibility assessment of the pedestrian improvements at the Barnett Avenue / Midway Drive intersection shown in Figure 3-13 of the Midway-Pacific Highway Community Plan. A transportation impact was calculated at this study intersection therefore, all feasible pedestrian improvements should be implemented.

** See the Pedestrian Mobility section of this report for more information on these recommendations and additional pedestrian improvement recommendations.*

Figure 19-3 Tier 1 Recommended Pedestrian Improvements

- # Study Intersection
- Project Site
- Parks
- Wetlands
- Marine Corps Recruitment Depot
- Pedestrian Improvements
- Pedestrian bridge
- Old Town Transit Center
- Washington St Trolley Station

0 0.25 0.5 Miles

20.0 BICYCLE MOBILITY

Bicycle mobility will continue to evolve as a more viable option to auto use. The development of a safe, comfortable, and well-connected bicycle network that will make bicycling an attractive mode of transportation is the vision of the Midway-Pacific Highway Community Plan.

As part of this local bicycle mobility assessment, the existing bicycle facilities and basic deficiencies within a ½ mile bicycling distance from the Proposed Action alternatives were documented and the effects of the Proposed Action alternatives on the bicycle network were evaluated.

20.1 Existing Bicycle Conditions

A detailed bicycle network inventory was conducted within a minimum of ½ mile biking distance from the Proposed Action alternatives site. The inventory included classifying the existing bicycle network into Class I, Class II, Class III or cycle track bicycle facilities as further described in ***Table 20–1***. ***Figure 20–1*** shows the existing bicycle network.

TABLE 20–1
BICYCLE CLASSIFICATIONS

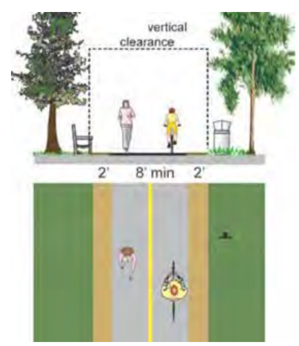
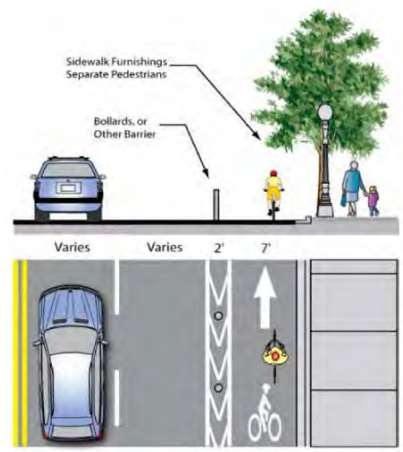
Class Description	Example Graphic
Class I – Bike Path Bike paths, also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Bike paths provide critical connections in the city where roadways are absent or are not conducive to bicycle travel.	
Class II – Bike Lane Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions. Bike lanes also facilitate predictable behavior and movements between bicyclists and motorists. Whenever possible, bike lanes should be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or wayfinding signs. Enhanced buffered bike lanes add additional striping and lateral clearance between bicyclists and vehicles, leading to lowered levels of stress for riders.	
(continued on Next Page)	

TABLE 20–1
BICYCLE CLASSIFICATIONS

Class Description	Example Graphic
(continued from Previous Page)	
Class III - Bike Route Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, Bike Routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand. Whenever possible, Bike Routes should be enhanced with treatments that improve safety and connectivity, such as the use of "sharrows" or shared lane markings to delineate that the road is a shared-use facility.	
Class IV - Cycle Track A cycle track is a hybrid type bicycle facility that combines the experience of a separated path with the on-street infrastructure of a conventional bike lane. Cycle tracks are bikeways located in roadway right-of-way but separated from vehicle lanes by physical barrier or buffers. Cycle tracks provide for one-way bicycle travel in each direction adjacent to vehicular travel lanes and are exclusively for bicycle use. Cycle tracks are not recognized by Caltrans Highway Design Manual as a bikeway facility. To provide bicyclists with the option of riding outside of the cycle track to position themselves for a left or right turn, parallel bikeways should be added adjacent to cycle track facilities whenever feasible.	

Source: Midway-Pacific Highway Community Plan

20.1.1 *Existing Bicycle Activity*

Existing bicycle counts were collected at the study area intersections during the commuter a.m. and p.m. peak hours. The combined a.m. and p.m. bicycle counts were calculated and every study intersection was categorized as low activity, average activity or high activity. This represents a measure of bicycle activity relative to the study area. ***Figure 20–2*** shows the existing bicycle activity.

The following study intersections were observed as "high" bicycle activity locations:

Intersection #3. Taylor Street / Morena Boulevard
Intersection #4. Taylor Street / Juan Street
Intersection #5. Taylor Street / Congress Street
Intersection #6. Rosecrans Street / Taylor Street / Pacific Highway
Intersection #7. Rosecrans Street / Jefferson Street
Intersection #10. Rosecrans Street / Kurtz Street
Intersection #11. Rosecrans Street / Sports Arena Boulevard

20.2 Planning Documents Review

A review of planning documents such as the *City of San Diego Bicycle Master Plan*, *San Diego Regional Bike Plan, Midway-Pacific Highway Community Plan, Midway-Pacific Highway Impact Fee Study, Old Town San Diego Community Plan, Old Town San Diego Impact Fee Study, Capital Improvements Program* and *Regional Transportation Improvement Program* was conducted.

20.3 Recommended Bicycle Network Improvements

Based on the review of the existing bicycle network and planning documents, two tiers of bicycle improvements are recommended.

<u>Tier 1: The following are bicycling improvement recommendations that shall be implemented by the Proposed Action alternatives as mitigation measures:</u>

B-1. Pacific Highway, between Old Town Transit Center Driveway and Witherby Street

- Provide Class IV bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.

B-2. Witherby Street, between Pacific Highway and Hancock Street

- Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.

B-3. Sports Arena Boulevard, between Rosecrans Street and Pacific Highway

- Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.

B-4. Midway Drive, between Rosecrans Street and Barnett Avenue

- Provide Class I bicycle facilities consistent with the *Midway-Pacific Highway Community Plan*.

B-5. Enterprise Street, between Pacific Highway and Midway Drive

- Upgrade the bicycle classification from Class III to Class II.

<u>Tier 2: The following are bicycle improvement recommendations that should be considered to enhance offsite accessibility within a ½ mile bicycling distance to the site:</u>

B-6. Taylor Street, between Kurtz Street and Presidio Drive

- Provide Class II bicycle facilities consistent with the *Midway-Pacific Highway Community Plan* and the *Old Town Community Plan.*

B-7. Juan Street, between Taylor Street and Witherby Street

- Provide Class III bicycle facilities consistent with the *Old Town Community Plan.*

B-8. Barnett Avenue, between Henderson Avenue and Midway Drive

- Provide a Class II bicycle facility (south side only) consistent with the *Midway-Pacific Highway Community Plan*.

B-9. Hancock Street, between Old Town Avenue to Noell Street

- Provide a Class II bicycle facility consistent with the *Midway-Pacific Highway Community Plan*.

B-10. Old Town Avenue, between Hancock Street and San Diego Avenue

- Provide a Class II bicycle facility consistent with the *Midway-Pacific Highway Community Plan* and *Old Town Community Plan.*

B-11. Sports Arena Boulevard, between Kemper Street and 1,050 feet east of Kemper Street

- Replace the existing the Class III bicycle facility on the south side of Sport Arena Boulevard to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.

B-12. Rosecrans Street, between Madrid Street and Midway Drive

- Replace the existing the Class III bicycle facility on the west side of Rosecrans Street to a Class II bicycle facility to be consistent with the Midway-Pacific Highway Community Plan.

Figure 20–3 shows the Tier 1 Recommended Bicycle Network Improvements.

20.4 Other Recommendations

As bicycling continues to evolve as a more viable option to auto use, it becomes critical for the Proposed Action alternative to enhance bicycle accessibility and mobility. As such, it is recommended to prepare a Bicycle Master Plan for the Proposed Action alternatives that will guide design and implementation of policies/programs to enhance access and mobility around and within the site for bicyclist of all ages and abilities.

The Bicycle Master Plan would include, but is not limited to, the following elements:

- Design standards and guidance
- Bikeability and mobility
- Feasibility and social assessments
- Wayfinding
- Policies and programs

This can be combined with the recommendation in *Section 19.4,* which would result in a Pedestrian and Bicycle Master Plan document.

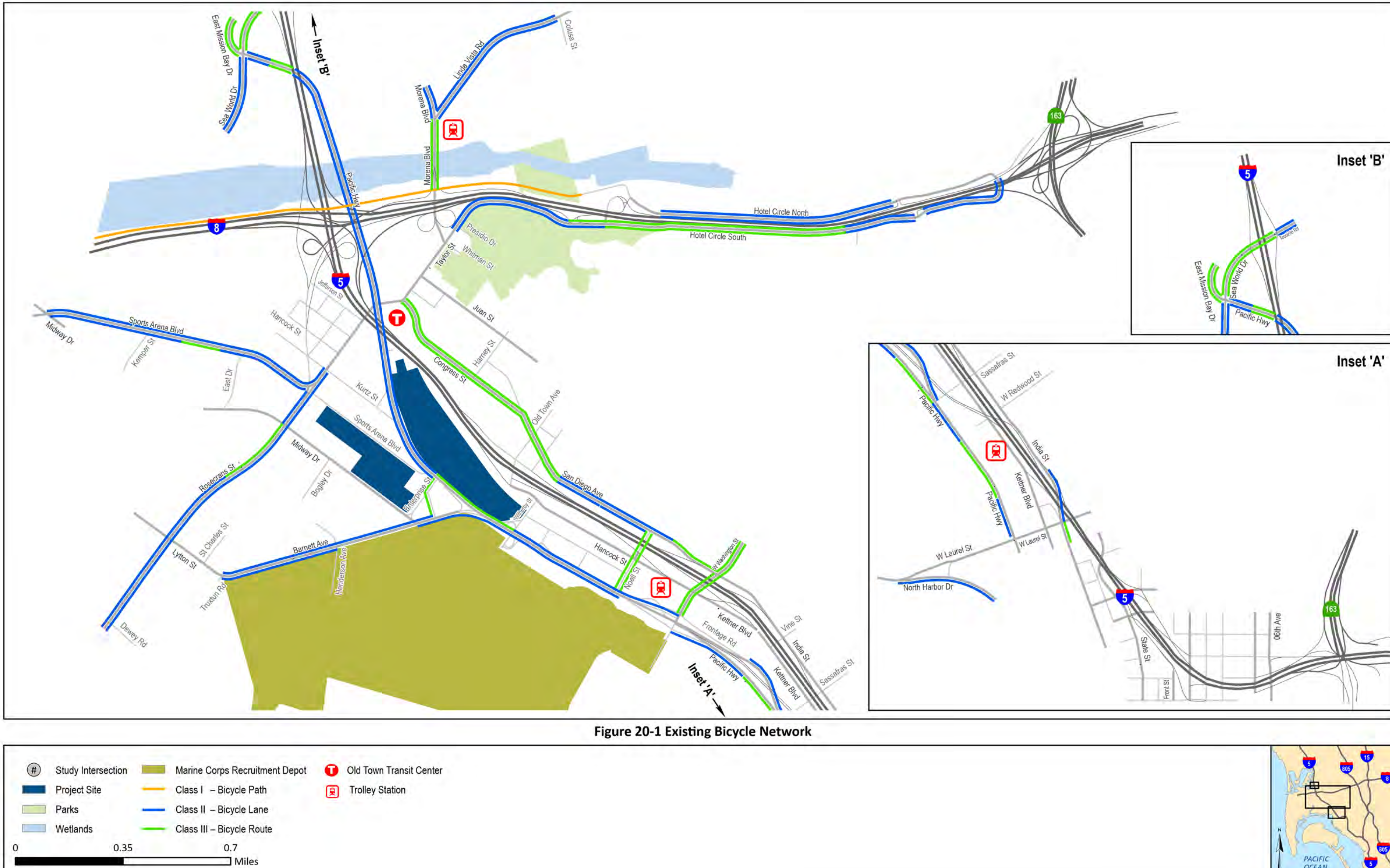


Figure 20-1 Existing Bicycle Network

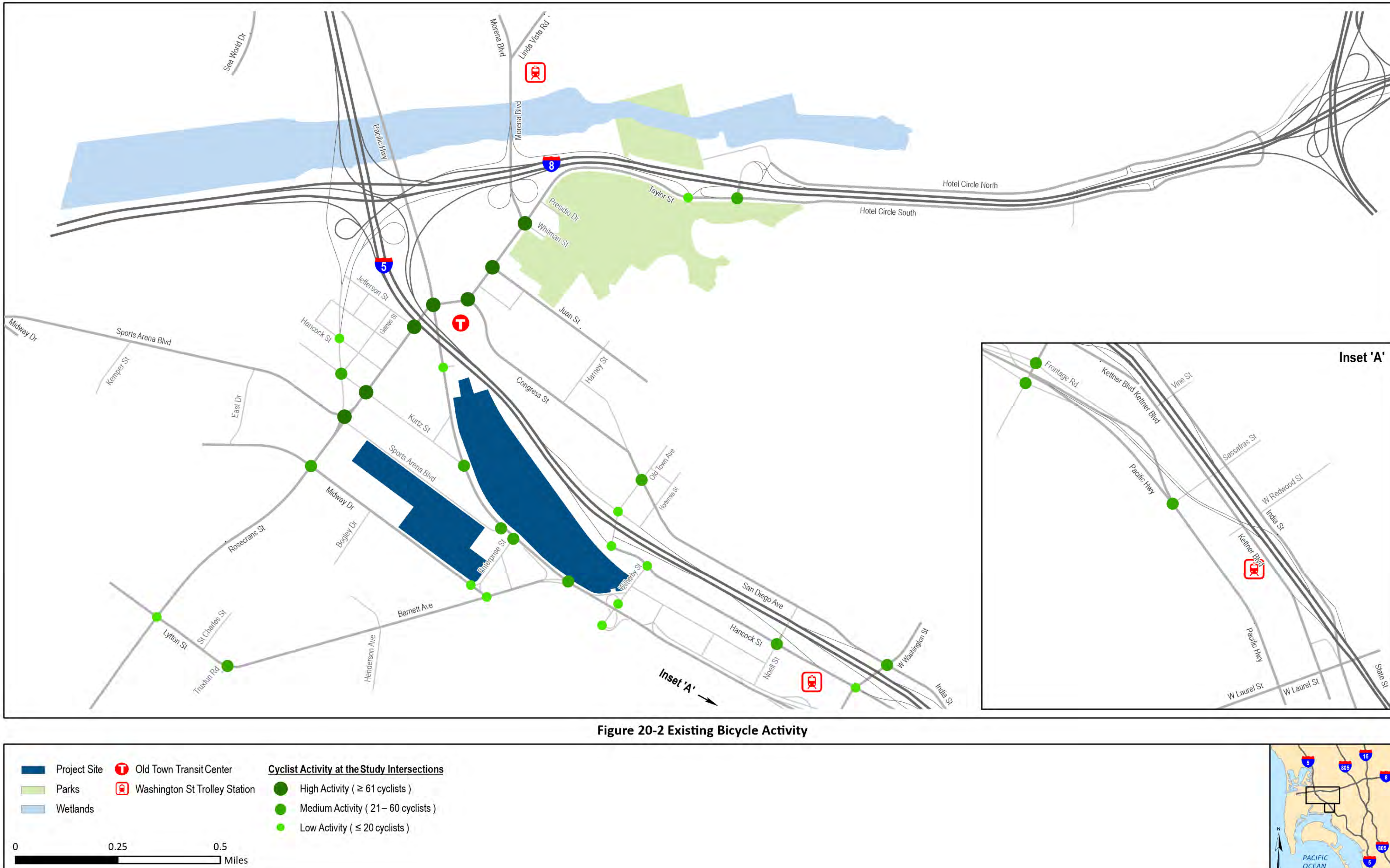
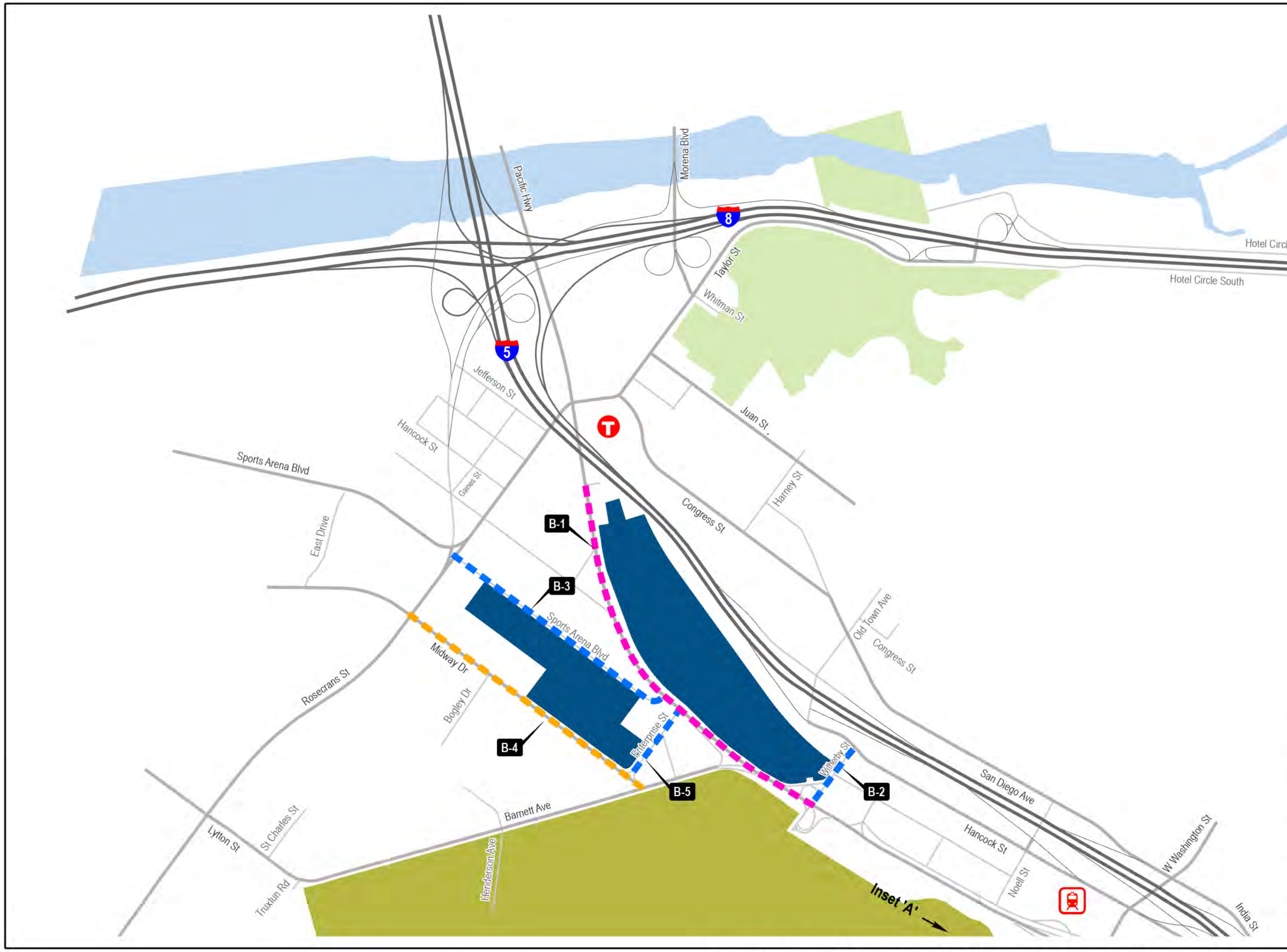


Figure 20-2 Existing Bicycle Activity



B-1	Provide Class IV bicycle facilities along Pacific Highway, between Old Town Transit Center Driveway and Witherby Street.
B-2	Provide Class II bicycle facilities along Witherby Street, between Pacific Highway and Hancock Street.
B-3	Provide Class II bicycle facilities along Sports Arena Boulevard, between Rosecrans Street and Pacific Highway.
B-4	Provide Class I bicycle facilities along Midway Drive, between Rosecrans Street and Barnett Avenue.
B-5	Upgrade the bicycle classification from Class III to Class II along Enterprise Street, between Pacific Highway and Midway Drive.

** See the Bicycle Mobility section of this report for more information on these recommendations and additional bicycle improvement recommendations.*

Figure 20-3 Tier 1 Recommended Bicycle Improvements

21.0 TRANSIT MOBILITY

SANDAG's 2050 Regional Transportation Plan (RTP) and Sustainable Communities Strategies (SCS) identifies transit's expanding role to meet local and regional mobility needs. Targets have been set in the CAP to increase transit mode share within Transit Priority Areas (TPA's). TPA's, in general, include areas within one-half mile of a rail station or the intersection of two high-quality bus routes. The SANDAG RTP developed an Urban Area Transit Strategy (UATS), focusing on the most urbanized areas of the region where transit investments are generally most efficient and effective. The Proposed Action alternatives are within both a TPA and the UATS.

As part of this local transit mobility assessment, the existing transit facilities and amenities within a ½ mile walking distance from the Proposed Action alternatives was documented and the effects of the Proposed Action alternatives on the transit network were evaluated.

21.1 Existing Transit Conditions

The area is well served by public transit, both local and regional. The Old Town Transit Center is a focal point for transit access in Old Town San Diego and adjacent communities. It is where the interchange of various transit routes and travel modes occur. The center (or hub) includes transit services provided by the San Diego Metropolitan Transit System (MTS), the North County Transit District (NCTD) and Amtrak networks. Below is a brief description of the transit services:

- *MTS Bus* – The MTS bus provides local and regional connections between neighborhoods and cities. 11 MTS bus routes are serving the area. Route summaries are provided in *Section 21.1.1*.
- *MTS Trolley* – The MTS Trolley is a light rail system that connects the eastern and southern areas of San Diego County with the Downton region. The Sycuan Green Line travels east and west, and is the only trolley route serving the area. The Sycuan Green Line operates between the City of Santee and Downtown San Diego.
- *NCTD Coaster* – The NCTD Coaster is a commuter train that travels north and south, connecting Oceanside to San Diego.
- *Amtrak* – Amtrak is a national rail service with route connections between 46 states, the District of Columbia and three Canadian provinces.

The existing transit network are illustrated in ***Figure 21–1***.

21.1.1 *Bus Route Summaries*

This section describes the various bus routes in the area.

- **Route 8** runs from the Old Town Transit Center to Beyard Street and Garnet Avenue via Mission Boulevard, West Mission Bay, and Sports Arena Boulevard. Key destinations include Belmont Park, Crystal Pier, Mission, Bay, and Pachanga Arena (Sports Arena Boulevard). Route 8 currently operates Monday through Friday from 5:45 a.m. through 12:15 a.m. departing from the Old Town Transit Center and from 5:27 a.m. through 11:39 a.m. departing from Bayard Street and Garnet Avenue. The Saturday schedule begins at 5:45 a.m. through 12:15 a.m. departing from the Old Town Transit Center and begins at 6:09 a.m. to 11:39 p.m. departing from Bayard Street and Garnet Avenue. The Sunday schedule begins at 6:00 a.m. through 9:45 p.m. departing from the Old Town Transit Center and begins at 6:09 a.m. through 9:11 p.m. departing from Bayard Street and Garnet Avenue. Route 8 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 20 to 30-minute headways.

- **Route 9** runs from the Old Town Transit Center to Beyard Street and Garnet Avenue via Garnet Avenue, Ingraham Street, and Sports Arena Boulevard. Key destinations include Crystal Pier, Mission, Bay, Pechanga Arena (Sports Arena), and Seaworld. Route 9 currently operates Monday through Friday from 6:00 a.m. through 8:33 p.m. departing from the Old Town Transit Center and from 5:46 a.m. through 9:09 p.m. departing from Bayard Street and Garnet Avenue. The Saturday schedule begins at 6:33 a.m. through 8:33 a.m. departing from the Old Town Transit Center and begins at 6:22 a.m. to 9:08 p.m. departing from Bayard Street and Garnet Avenue. The Sunday schedule begins at 7:43 a.m. through 7:43 p.m. departing from the Old Town Transit Center and begins at 8:18 a.m. through 8:48 p.m. departing from Seaworld. Route 8 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 30-minute headways.

- **Route 10** runs from the Old Town Transit Center to University Avenue and College Avenue via University Avenue, Washington Street, and Pacific Highway. Key destinations include City Heights Retail Village, City Heights Transit Plaza, Hillcrest DMV, The HUB Hillcrest Market, Scripps Mercy Hospital, and Village Hillcrest. Route 10 currently operates Monday through Friday from 5:51 a.m. through 11:45 p.m. departing from the Old Town Transit Center and from 4:45 a.m. through 10:29 p.m. departing from University Avenue and College Avenue. The Saturday schedule begins at 5:51 a.m. through 11:42 p.m. departing from the Old Town Transit Center and begins at 5:11 a.m. through 10:28 p.m. departing from the City Heights Transit Plaza. The Sunday schedule begins at 6:32 a.m. through 9:56 p.m. departing from the Old Town Transit Center and begins at 5:23 a.m. through 7:45 p.m. departing from the City Heights Transit Plaza. Route 10 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 15 to 30-minute headways.

- **Route 28** runs from the Old Town Transit Center to Anchorage and Shelter Island Drive via Rosecrans Street. Key destinations include High Tech High Village, Liberty Station, and Loma Square. Route 28 currently operates Monday through Friday from 5:45 a.m. through 10:30 p.m. departing from the Old Town Transit Center and from 6:15 a.m. through 10:30 p.m. departing from Anchorage and Shelter Island Drive. The Saturday schedule begins at 6:15 a.m. through 10:30 p.m. departing from the Old Town Transit Center and begins at 6:16 a.m. to 10:15 p.m. departing from Anchorage and Shelter

Island Drive. The Sunday schedule begins at 6:30 a.m. through 7:30 p.m. departing from the Old Town Transit Center and begins at 6:59 a.m. through 6:58 p.m. departing from Anchorage and Shelter Island Drive. Route 28 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 30-minute to 1-hour headways.

- **Route 30** runs from Downtown to UTC / VA Medical Center via Old Town, Pacific Beach, La Jolla, and UC San Diego. Key destinations include Birch Aquarium, Mission Bay High School, UC San Diego, VA Medical Center, and Westfield UTC. Route 30 currently operates Monday through Friday from 5:11 a.m. through 6:59 p.m. departing from 9th Avenue and C Street and from 5:45 a.m. through 11:34 p.m. departing from Old Town Transit Center. The Saturday schedule begins at 5:26 a.m. through 6:56 a.m. departing from 9th Avenue and C Street and begins at 5:45 a.m. to 12:15 a.m. departing from Old Town Center. The Sunday schedule begins at 5:46 a.m. through 7:44 a.m. departing from City College Transit Center and begins at 6:00 a.m. through 11:00 p.m. departing from Old Town Transit Center. Route 30 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 15-minute headways.

- **Route 35** runs from the Old Town Transit Center to Cable Street and Newport Avenue via Rosecrans Street, Midway Drive, West Point Loma Boulevard and Cable Street. Key destinations include Loma Square, Point Loma Plaza, Robb Field, and Sports Arena Plaza. Route 35 currently operates Monday through Friday from 5:45 a.m. through 11:00 p.m. departing from the Old Town Transit Center and from 5:10 a.m. through 10:09 p.m. departing from Cable Street and Newport Avenue. The Saturday schedule begins at 6:12 a.m. through 11:00 p.m. departing from the Old Town Transit Center and begins at 6:40 a.m. to 10:09 p.m. departing Cable Street and Newport Avenue. The Sunday schedule begins at 6:27 a.m. through 9:30 p.m. departing from the Old Town Transit Center and begins at 6:55 a.m. through 8:38 p.m. departing from Cable Street and Newport Avenue. Route 35 operates on select observed holidays with a Saturday or Sunday schedule. All schedules generally operate with 15 to 30-minute headways.

- **Route 44** runs from the Old Town Transit Center to Clairemont Drive and Clairemont Mesa Boulevard via Taylor Street, Linda Vista Road, Mesa College Drive, Armstrong Place, Armstrong Street, Stalmer Street, Convoy Street, and Clairemont Mesa Boulevard. Key destinations include Clairemont Square, Convoy Village, Kearny High School, Madison High School, Mesa College, and University of San Diego. Route 44 currently operates Monday through Friday from 5:43 a.m. through 11:28 p.m. departing from the Old Town Transit Center and from 4:24 a.m. through 10:21 p.m. departing from Clairemont Drive and Clairemont Mesa Boulevard. The Saturday schedule begins at 6:43 a.m. through 11:13 a.m. departing from the Old Town Transit Center and begins at 5:52

a.m. through 10:21 p.m. departing from Clairemont Drive. The Sunday schedule begins at 6:30 a.m. through 9:30 p.m. departing from the Old Town Transit Center and begins at 6:37 a.m. through 8:33 p.m. departing from Clairemont Drive and Clairemont Mesa Boulevard. Route 44 operates on select observed holidays with a Saturday or Sunday schedule. The weekday schedule generally operates with 10 to 15-minute headways, and the weekend schedule generally operates with 30-minute to 1-hour headways.

- **Route 83** runs from the Old Town Transit Center to the American Plaza Trolley Station via Taylor Street, Juan Street, Sunset Boulevard, Lewis Street, Hawk Street, Goldfinch Street, Reynard Way, State Street, and Kettner Boulevard. Key destinations include American Plaza, Lewis Street, Little Italy, Old Town Station Historic Park, and Reynard Way. Route 83 currently operates Monday through Friday from 7:08 a.m. through 5:48 p.m. departing from the Old Town Transit Center and from 6:34 a.m. through 6:29 p.m. departing from the American Plaza Trolley Station. Route 83 does not operate on select observed holidays or weekends. All schedules generally operate with 1-hour and 10-minute headways.

- **Route 88** runs from the Old Town Transit Center to the Fashion Valley Transit Center via Taylor Street, Hotel Circle South, Hotel Circle North, and Fashion Valley Road. Key destinations include Fashion Valley Mall, Old Town State Historical Park, and Presidio Park. Route 88 currently operates Monday through Friday from 6:11 a.m. through 9:11 p.m. departing from the Old Town Transit Center and from 5:55 a.m. through 8:55 p.m. departing from the Fashion Valley Transit Center. Saturday route schedule begins at 5:57 a.m. through 8:27 p.m. departing from the Old Town Transit Center and begins at 5:40 a.m. through 8:10 p.m. departing from the Fashion Valley Transit Center. Route 88 does not operate on select observed holidays or Sundays. All schedules generally operate with 30-minute headways.

- **Route 105** runs from Old Town to UTC via Morena Boulevard and Clairemont Drive. Key destinations include Bay Park, Clairemont High School, Clairemont Square, and Univercity City High School. Route 105 currently operates Monday through Friday from 5:14 a.m. through 10:27 p.m. departing from the Old Town Transit Center and from 5:27 a.m. through 6:54 p.m. departing from the UTC Transit Center. The Saturday schedule begins begins at 6:18 a.m. through 8:27 p.m. departing from the Old Town Transit Center and begins at 6:47 Am through 7:51 p.m. departing from Clairemont Square. The Sunday schedule begins at 7:28 a.m. through 8:33 p.m. departing from the Old Town Transit Center and begins at 6:53 a.m. through 8:02 p.m. departing from Clairemont Square. All schedules operate with 30-minute headways. All schedules generally operate with 30-minute to 1-hour headways.

- **Route 150** runs from Downtown to UTC / VA Hospital Express via Old Town and UC San Diego D. Key destinations include Costa Verde Shopping Center, UC San Diego, VA Medical Center, and Westfield UTC. Route 150 currently operates Monday through Friday from 5:00 a.m. through 9:00 p.m. departing from 1st Avenue and Broadway and from 6:04 a.m. through 9:02 a.m. departing from the UTC Transit Center. The Saturday schedule begins at 6:45 a.m. through 5:45 p.m. departing from Old Town Transit Center and begins at 8:02 a.m. through 9:04 p.m. departing from the UTC Transit Center. Route 150 doesn't operate on Sundays and select observed holidays. All schedules generally operate with 30-minute headways.

21.2 Transit Mobility Review

In this section, stations within ½ walking distance from the Proposed Action alternatives were evaluated. In general, the transit connectivity is good. There are missing sidewalks identified in *Section 14.0* that may make it difficult for some users to access certain bus stops. Furthermore, each of the bus stops were reviewed based on the amenities provided for bus service users. ***Table 21–1*** provides a summary of the amenities provided at each of the bus stations. It should also be noted that the Old Town Transit Center provides additional amenities beyond what is indicated in the *Table 21–1*. The Old Town Transit Center provides parking (shared between transit riders and San Diego State Historic Park visitors), porta potties, hand-wash stations, bicycle lockers, pay phones, and a small convenience store.

TABLE 21–1
AMENITIES AT TRANSIT STOPS

Location	Stop ID	Shelters	Benches	Trash Receptacles	Station Signs	Maps / Wayfinding	Lighting[1]
Old Town Transit Center	Various[2]	Yes	Yes	Yes	Yes	Yes	Yes
Rosecrans St & Sports Arena Blvd	12675	Yes	Yes	Yes	Yes	Yes	Yes
Sports Arena Blvd & East Dr	13342	No	Yes	No	Yes	No	No
Sports Arena Blvd & 3250	13344	No	Yes	No	Yes	No	No
Rosecrans St & Midway Dr	10802	No	Yes	No	Yes	No	No
Rosecrans St & Midway Dr	11173	Yes	Yes	Yes	Yes	Yes	Yes
(continued on Next Page)							

TABLE 21–1
AMENITIES AT TRANSIT STOPS

Location	Stop ID	Shelters	Benches	Trash Receptacles	Station Signs	Maps / Wayfinding	Lighting[1]
(continued from Previous Page)							
Rosecrans St & Loma Square	12350	Yes	Yes	Yes	Yes	Yes	Yes
Rosecrans St & N. Evergreen St	12669	No	Yes	Yes	Yes	No	No
Rosecrans St & N. Evergreen St	11928	No	Yes	No	Yes	No	No
Rosecrans St & Kurtz St	11575	No	Yes	No	Yes	No	No
Rosecrans St & Moore St	12679	Yes	Yes	Yes	Yes	Yes	Yes
Rosecrans St & Moore St	11577	No	Yes	No	Yes	No	No
Pacific Hwy & Sports Arena Blvd	11589	No	No	No	Yes	No	No
Pacific Hwy & Enterprise St	12691	No	No	No	Yes	No	No
Pacific Hwy & 4137	12366	No	Yes	No	Yes	No	No
Pacific Hwy & Witherby St	11957	No	Yes	No	Yes	No	No
Midway Dr & East Dr	10410	Yes	Yes	Yes	Yes	Yes	Yes
Midway Dr & East Dr	11169	No	Yes	No	Yes	No	No
Taylor St & Juan St	12689	No	Yes	No	Yes	No	No
Taylor St & Sunset St	11584	No	Yes	No	Yes	No	No

Footnotes:
1. Lighting may include lighting fixture within the shelter or a street light within 30 feet.
2. Stop IDs 94025, 94019, 94023, 94020, 94024 ,94022 ,96034, 94021, 94027, 94028, 94030, and 94034.

21.3 Planning Documents Review

A review of planning documents such as the *Midway-Pacific Highway Community Plan*, *Midway-Pacific Highway Impact Fee Study*, *Old Town San Diego Community Plan*, *Old Town San Diego Impact Fee Study*, *Capital Improvements Program* and *Regional Transportation Improvement Program* was conducted. Two key projects are planned: the Mid-Coast Trolley and Rapid Bus Service.

The planned Mid-Coast Trolley project proposes a new trolley line connecting Downtown San Diego to the University City Community. When completed there will be a total of 11 miles of new rail along Interstate 5 and nine new stations. This project, along with upgrades to existing transit stations will be transformative to regional mobility.

The planned Rapid Bus proposes service along Sports Arena Boulevard, Pacific Highway and Rosecrans Street, connecting to the Old Town Transit Center which will complement the existing trolley services.

In addition, corridor transit improvements such as queue jump lanes, transit signal priority and other measures identified within the City's *Traffic Signal Communications Master Plan* are planned along the following corridor:

- Sport Arena Boulevard, between Midway Drive and Rosecrans Street
- Midway Drive between Sports Arena Blvd and Rosecrans Street
- Rosecrans Street, between Lytton Street and Pacific Highway
- Pacific Highway, between Taylor Street and Laurel Street
- Taylor Street, between Pacific Highway to the Old Town Community Boundary

21.4 Old Town Transit Center Ridership

Boarding and alighting information was obtained from SANDAG. ***Table 21–2*** reports the ridership projections for the Old Town Transit Center for Year 2030 and Year 2050. It should be noted that Year 2050 is slightly less than Year 2030 in large part due to competing transit lines.

TABLE 21–2
OLD TOWN TRANSIT CENTER FUTURE DAILY RIDERSHIP

Mode	**Year 2030**		**Year 2050**	
	Boarding	**Alighting**	**Boarding**	**Alighting**
Bus	10,847	10,997	10,258	10,306
Trolley	10,817	10,865	10,129	10,120
Coaster	1,279	1,219	1,082	1,130

Source: SANDAG

21.5 Recommended Transit Improvements

Based on the review of the existing transit network, planning documents and transportation impacts, it is recommended to further evaluate the feasibility of providing transit signal priority along the following segment locations. If transit signal priority is feasible, the Proposed Action alternatives should provide transit signal priority improvements.

T-1. Midway Drive, between East Drive to Rosecrans Street

T-2. Rosecrans Street, between Dewey Road and Pacific Highway

T-3. Pacific Highway, between Friars Road and Washington Street

T-4. Taylor Street between Presidio Drive and I-8 Eastbound Ramps

In addition, it is recommended to prepare a Transit Mobility Plan for the Proposed Action alternatives.

The Transit Mobility Plan would include, but is not limited to, the following elements:

- Design standards and guidance
- Transit station amenities
- Provide bus stop amenity improvements within ½ mile
- Transit station services (e.g., bus routes, trolley lines, shuttles, etc.)
- Intelligent Transportation Systems (ITS)
- Feasibility and social assessments
- Wayfinding
- Policies and programs

Figure 21–2 shows the Recommended Transit Improvements.

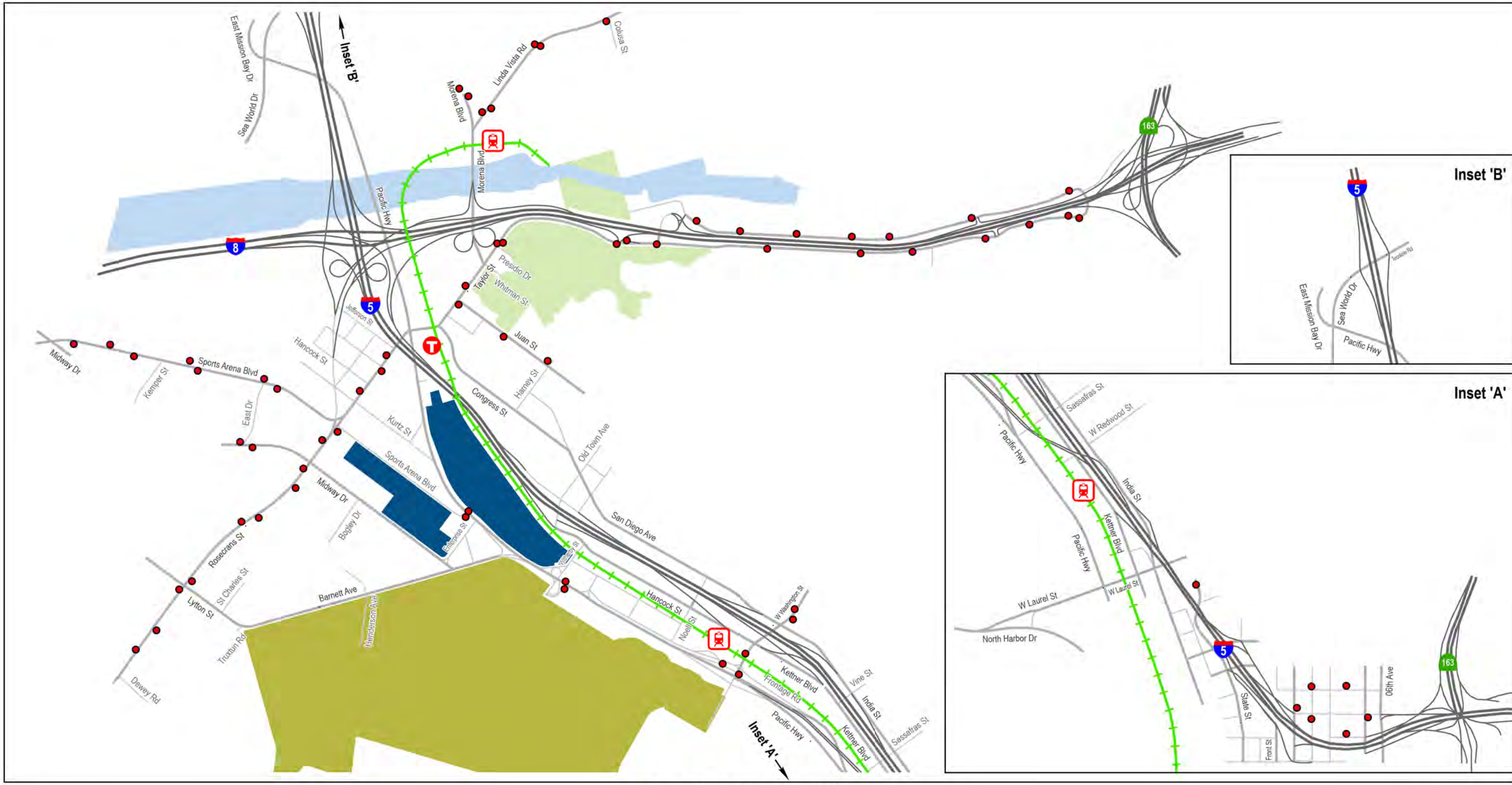


Figure 21-1 Existing Transit Network

Study Intersection
Marine Corps Recruitment Depot
MTS Trolley Green Line
Project Site
Old Town Transit Center
Parks
Trolley Station
Wetlands
Bus Stops

0 0.35 0.7 Miles

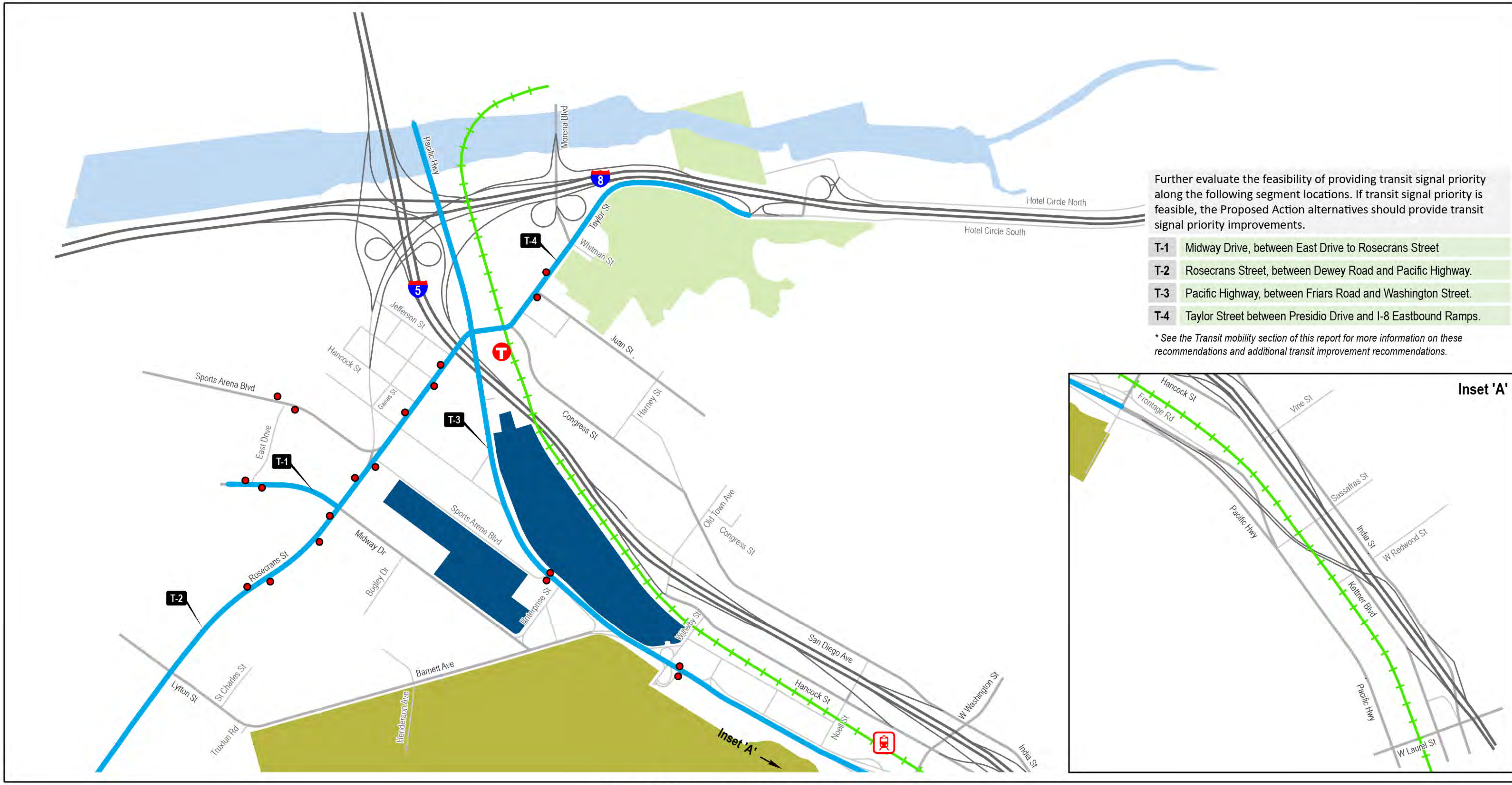


Figure 21-2 Recommended Transit Improvements

- # Study Intersection
- Project Site
- Parks
- Wetlands
- Marine Corps Recruitment Depot
- Old Town Transit Center
- Washington St Trolley Station
- Bus Stops
- MTS Trolley Green Line
- Recommended Transit Improvements

0 0.25 0.5 Miles

22.0 CRASH ANALYSIS

Crash data was obtained from the Transportation Injury Mapping System (TIMS) and Statewide Integrated Traffic Records System (SWITRS) for a five-year period from January 2013 through December 2017. During this time period, a total of 52 crashes were reported on the roadway network near the Navy Revitalization Old Town Campus site.

22.1 Vehicular Collisions

Table 22–1 summarize the crashes by location and severity. No fatal crashes were reported within the five-year period. Of the 52 crashes, the majority (24) occurred along Pacific Highway between Kurtz Street to Witherby Street including:

- 2 Vehicle-pedestrian
- 1 Head-on
- 11 Broadside
- 3 rear end
- 2 side swipe
- 1 overturned
- 3 hit object

14 crashes were also reported on Midway Drive between Rosecrans Street and Barnett Avenue during this five-year period.

22.2 Pedestrian & Bicycle Involved Collisions

Of the 52 collisions reported, only two (4) collisions involved a pedestrian. The pedestrian involved collisions occurred on Pacific Highway between Old Town Transit Center to Witherby Street (2) and Kurtz Street between Rosecrans Street to Pacific Highway (2). No bicycle involved collisions were reported during the five-year period.

TABLE 22–1
CRASH SEVERITY BY LOCATION FOR A 5-YEAR PERIOD: 2013 THROUGH 2017

Street	Crash Severity									
	Pedestrian	**Head-on**	**Broadside**	**Rear-end**	**Sideswipe**	**Overturned**	**Hit Object**	**Other**	**Not Stated**	**Total by Location**
1. Pacific Highway: Old Town Transit Center to Witherby St	2	1	11	3	2	1	3	1	0	**24**
2. Sports Arena Boulevard: Rosecrans St to Pacific Hwy	0	0	0	0	0	0	0	0	0	**0**
3. Barnett Avenue: Midway Dr to Pacific Hwy	0	0	2	2	0	0	0	1	0	**5**
4. Enterprise Street: Pacific Hwy to Midway Dr	0	0	0	1	0	0	0	1	0	**2**
5. Kurtz Street: Rosecrans St to Pacific Hwy	2	0	1	1	0	0	0	0	0	**4**
6. Midway Drive: Rosecrans St to Barnett Ave	0	1	4	6	0	0	0	2	1	**14**
7. Jessop Lane: Enterprise St to Barnett Ave	0	0	0	0	0	0	0	1	0	**1**
8. Witherby Street near Pacific Hwy	0	0	0	1	0	0	1	0	0	**2**
Total by Type	**4**	**2**	**18**	**14**	**2**	**1**	**4**	**6**	**1**	**52**

23.0 CONSTRUCTION TRAFFIC ASSESSMENT

23.1 Construction Activities

The Project is anticipated to be constructed through 2049. Staging for all equipment and construction personnel will occur in contained and well managed areas.

23.2 Project-Specific Traffic Control Measures

It would be anticipated that construction operations would result in potential significant construction traffic impacts. Therefore, prior to beginning construction, work zone Traffic Control Plans (TCP) and construction Transportation Management Plans (TMP) should be prepared to avoid temporary construction impacts where possible.

The Plans should be prepared in accordance with all applicable encroachment permits and plans, ordinances, and policies. The Plans should include provisions for the following:

- The applicant should comply with the following work hour recommendations:
    - No site work, building construction, or related activities, including equipment mobilization should be permitted to start on the Project prior to 7:00 a.m. and work for the day should be completed by 7:00 p.m.;
    - No work should be permitted on Sundays or City Holidays;
    - In addition to the above the applicant should erect one or more signs stating the work hour restrictions. Signs should be installed as may be required, in the vicinity of the project construction trailer if a job site trailer is used, or at such other locations as may be deemed appropriate. The sign should be a minimum of 24” x 36” and should be weather proofed.;
- Coordinate with public transit providers to provide access options for workers (where necessary);
- Provide off-site construction worker parking areas and shuttles for workers to/from the job site, as necessary;
- Implement standard safety practices, including installing appropriate barriers between work zones and transportation facilities, placement of appropriate signage, and use of traffic control devices;
- Coordinate with the jurisdictions prior to construction to determine specific traffic handling layouts;
- Protect traffic by using flaggers, warning signs, lights, and barricades to guide vehicles through or around construction zones;
- Restore roadway capacity to the extent feasible during hours when construction activities are not occurring, which could include the use of road plates or temporary paving;
- Clean and restore roadways upon completion of work;
- Limit the length of open trenches to the length allowed by encroachment permits;
- Implement construction schedules and techniques that minimize roadway closures, including the number of cross streets and side streets that may be blocked or otherwise impacted by construction activities;

- Provide detours for cyclists and pedestrians when bike lanes or sidewalks need to be closed;
- Install steel plates over open trenches in inactive construction areas to maintain existing bicycle and pedestrian access after construction hours;
- Enforce speed limits of construction vehicles on all roads;
- Notify emergency response providers of road closures at least one week prior to closures and include the location, date, time and duration of the closure; and
- Abide by encroachment permit conditions, which should supersede conflicting provisions in the Plans.

Preparation and implementation of the Plans would provide mitigation for the short-term, significant construction impacts.

It is recognized that there will be interim scenarios when construction of later phases is occurring simultaneously with occupancy and operation of earlier phases. However, implementation of the recommended Traffic Control Plan would reduce temporary construction impacts to below significant levels.

23.3 Construction Activities for the Proposed Alternatives

Although most of the construction phases are assumed to occur in series, some phases overlap. Specifically, it was assumed that the following combinations of phases could occur simultaneously during the Navy construction for Alternatives 2 through 5.

- Demolition + site preparation
- Grading and utility installation + foundation drilling
- Foundation drilling + building construction
- Grading and utility installation + building construction
- Building construction + paving
- Building construction + architectural coating

It was also assumed that the following combinations of phases could occur simultaneously during the private construction for Alternatives 2 through 5:

- Demolition + site preparation
- Grading and utility installation + foundation drilling + building construction
- Building construction + paving
- Building construction + architectural coating

Note that the worker & vendor trips are daily one-way trips. The hauling trips are total one-way trips.

23.3.1 *No-Action Alternative*

Under the No Action Alternative, the Navy would continue to maintain and repair the existing facilities. NAVWAR would continue to operate at OTC and no change would occur. Hence, there would not be any construction activity in this alternative.

23.3.2 *Alternative 1: Navy Recapitalization at OTC*

The construction activities for Alternative 1 Navy Recapitalization at OTC will include the 6 phases for the duration shown below. Construction is estimated to begin on January 1, 2021 and last until December 31, 2025. None of the construction activities are planned to overlap.

- Demolition (50 days)
- Site Preparation (20 days)
- Grading (45 days)
- Building Construction (1,079 days)
- Paving (55 days)
- Architectural Coating (55 days)

During the Demolition phase, an average of approximately 94 haul trips per day are expected over a 50-day period between January 1, 2021 and March 11, 2021.

A maximum of approximately 1,324 worker trips and 676 vendor trips per day are expected to occur during the Building Construction phase for 1,079 workdays between June 11, 2021 and July 30, 2025. During the grading phase from April 9, 2021 through June 10, 2021, a maximum of approximately 628 haul trips are expected per day.

Appendix AA includes a table summarizing the details of each construction phase for Alternate 1.

23.3.3 *Alternative 2: Higher-density Mixed-use Revitalization*

The construction activities for Alternative 2 Higher-density Mixed-use Revitalization will include the 17 phases for the duration shown below. Construction is estimated to begin on January 1, 2026 and last until December 31, 2049. Construction activities are planned to overlap.

- Demolition 1, (70 days)
- Site Preparation 1, (40 days)
- Grading and Utilities 1, (28 days)
- Foundation Drilling 1, (143 days)
- Building Construction 1, (867 days)
- Paving 1, (19 days)
- Architectural Coating 1, (19 days)
- Grading and Utilities 2, (22 days)
- Foundation Drilling 2, (114 days)
- Building Construction 2, (1,252 days)
- Paving 2, (15 days)
- Architectural Coating 2, (15 days)

- Grading and Utilities 3, (61 days)
- Foundation Drilling 3, (314 days)
- Building Construction 3, (3,772 days)
- Paving 3, (41 days)
- Architectural Coating 3, (41 days)

During the Demolition phase, an average of approximately 431 haul trips per day are expected over a 70-day period between January 1, 2021 and April 8, 2021.

The first overlapping construction phases in Alternative 2 are between June 4, 2026 and December 21, 2026, when Grading and Utilities 1 and Foundation Drilling 1 are planned to overlap. A maximum of approximately 110 worker trips and 32 vendor trips per day are expected to occur during this period over a period of 140 days. A maximum of approximately 1,094 haul trips per day are also expected during the Grading and Utilities Phase, over a period of 28 days.

The second overlapping construction phases in Alternative 2 are between January 1, 2030 and November 17, 2034, when Grading & Utilities 2, Foundation drilling 2 and Building Construction 2 are planned to overlap. A maximum of approximately 2,002 worker trips and 702 vendor trips per day and a maximum of approximately 1,114 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 22 days.

The third overlapping construction phases in Alternative 2 are between January 1, 2035 and March 13, 2036, when Grading & Utilities 3 and Foundation drilling 3 are planned to overlap. A maximum of approximately 110 worker trips and 32 vendor trips per day and a maximum of approximately 1,105 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 61 days.

Appendix AA includes a table summarizing the details of each construction phase Alternate 2.

23.3.4 *Alternative 3: Lower-density Mixed-use Revitalization*

The construction activities for Alternative 3 Lower-density Mixed-use Revitalization will include the 17 phases for the duration shown below. Construction is estimated to begin on January 1, 2026 and last until December 31, 2049. Construction activities are planned to overlap.

- Demolition 1 (70 days)
- Site Preparation 1 (40 days)
- Grading and Utilities 1 (28 days)
- Foundation Drilling 1 (120 days)
- Building Construction 1 (867 days)
- Paving 1 (19 days)
- Architectural Coating 1 (19 days)
- Grading and Utilities 2 (22 days)
- Foundation Drilling 2 (96 days)

- Building Construction 2 (1,252 days)
- Paving 2 (15 days)
- Architectural Coating 2 (15 days)
- Grading and Utilities 3 (61 days)
- Foundation Drilling 3 (264 days)
- Building Construction 3 (3,772 days)
- Paving 3 (41 days)
- Architectural Coating 3 (41 days)

During the Demolition phase, an average of approximately 431 haul trips per day are expected over a 70-day period between January 1, 2021 and April 8, 2021.

The first overlapping construction phases in Alternative 3 are between June 4, 2026 and November 7, 2029, when Grading and Utilities 1 and Foundation Drilling 1 are planned to overlap. A maximum of approximately 1,356 worker trips and 514 vendor trips per day are expected to occur during this period and a maximum of approximately 1,094 haul trips per day are also expected during the Grading and Utilities Phase, over a period of 28 days.

The second overlapping construction phases in Alternative 3 are between January 1, 2030 and November 17, 2034, when Grading & Utilities 2, Foundation Drilling 2 and Building Construction 2 are planned to overlap. A maximum of approximately 1,356 worker trips and 514 vendor trips per day and a maximum of approximately 1,114 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 22 days.

The third overlapping construction phases in Alternative 3 are between January 1, 2035 and September 8, 2049, when Grading & Utilities 3, Foundation Drilling 3 and Building Construction 3 are planned to overlap. A maximum of approximately 1,356 worker trips and 514 vendor trips per day and a maximum of approximately 1,105 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 61 days.

Appendix AA includes a table summarizing the details of each construction phase Alternate 3.

23.3.5 *Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center*

The construction activities for Alternative 4 Higher-density Mixed-use Revitalization including a Transit Center will include the 17 phases for the duration shown below. Construction is estimated to begin on January 1, 2026 and last until December 31, 2049. Construction activities are planned to overlap.

- Demolition 1 (70 days)
- Site Preparation 1 (40 days)
- Grading and Utilities 1 (28 days)
- Foundation Drilling 1 (210 days)

- Building Construction 1 (867 days)
- Paving 1 (19 days)
- Architectural Coating 1 (19 days)
- Grading and Utilities 2 (22 days)
- Foundation Drilling 2 (168 days)
- Building Construction 2 (1,252 days)
- Paving 2 (15 days)
- Architectural Coating 2 (15 days)
- Grading and Utilities 3 (61 days)
- Foundation Drilling 3 (462 days)
- Building Construction 3 (3,772 days)
- Paving 3 (41 days)
- Architectural Coating 3 (41 days)

During the Demolition phase, an average of approximately 431 haul trips per day are expected over a 70-day period between January 1, 2021 and April 8, 2021.

The first overlapping construction phases in Alternative 4 are between June 4, 2026 and November 7, 2029, when Grading and Utilities 1 and Foundation Drilling 1 are planned to overlap. A maximum of approximately 6,762 worker trips and 976 vendor trips per day are expected to occur during this period and a maximum of approximately 1,027 haul trips per day are also expected during the Grading and Utilities Phase, over a period of 28 days.

The second overlapping construction phases in Alternative 4 are between January 1, 2030 and November 17, 2034, when Grading & Utilities 2, Foundation Drilling 2 and Building Construction 2 are planned to overlap. A maximum of approximately 6,762 worker trips and 976 vendor trips per day and a maximum of approximately 1,045 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 22 days.

The third overlapping construction phases in Alternative 4 are between January 1, 2035 and September 8, 2049, when Grading & Utilities 3, Foundation Drilling 3 and Building Construction 3 are planned to overlap. A maximum of approximately 6,762 worker trips and 976 vendor trips per day and a maximum of approximately 1,037 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 61 days.

Appendix AA includes a table summarizing the details of each construction phase Alternate 4.

23.3.6 *Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center*

The construction activities for Alternative 5 Lower-density Mixed-use Revitalization including a Transit Center will include the 17 phases for the duration shown below. Construction is estimated to begin on January 1, 2026 and last until December 31, 2049. Construction activities are planned to overlap.

- Demolition 1 (70 days)
- Site Preparation 1 (40 days)
- Grading and Utilities 1 (28 days)
- Foundation Drilling 1 (220 days)
- Building Construction 1 (867 days)
- Paving 1 (19 days)
- Architectural Coating 1 (19 days)
- Grading and Utilities 2 (22 days)
- Foundation Drilling 2 (176 days)
- Building Construction 2 (1,252 days)
- Paving 2 (15 days)
- Architectural Coating 2 (15 days)
- Grading and Utilities 3 (61 days)
- Foundation Drilling 3 (484 days)
- Building Construction 3 (3,772 days)
- Paving 3 (41 days)
- Architectural Coating 3 (41 days)

During the Demolition phase, an average of approximately 431 haul trips per day are expected over a 70-day period between January 1, 2021 and April 8, 2021.

The first overlapping construction phases in Alternative 5 are between June 4, 2026 and November 7, 2029, when Grading and Utilities 1 and Foundation Drilling 1 are planned to overlap. A maximum of approximately 6,162 worker trips and 810 vendor trips per day are expected to occur during this period and a maximum of approximately 893 haul trips per day are also expected during the Grading and Utilities Phase, over a period of 28 days.

The second overlapping construction phases in Alternative 5 are between January 1, 2030 and November 17, 2034, when Grading & Utilities 2, Foundation Drilling 2 and Building Construction 2 are planned to overlap. A maximum of approximately 6,162 worker trips and 810 vendor trips per day and a maximum of approximately 909 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 22 days.

The third overlapping construction phases in Alternative 5 are between January 1, 2035 and September 8, 2049, when Grading & Utilities 3, Foundation Drilling 3 and Building Construction 3 are planned to overlap. A maximum of approximately 2,290 worker trips and 810 vendor trips per day and a maximum of approximately 902 haul trips per day are expected to occur during the Grading and Utilities Phase, over a period of 61 days.

Appendix AA includes a table summarizing the details of each construction phase Alternate 5.

23.4 General Traffic Control Content

The California Manual on Uniform Traffic Control Devices (MUTCD) states the Traffic Control Plan (TCP) "provides for the reasonably safe and efficient movement of road users through or around temporary traffic control zones while reasonably protecting workers, responders to traffic incidents, and equipment." TCPs define the locations of all roads that would need to be temporarily closed due to construction activities, including hauling of oversized loads by truck, truck routes, and permitted hours for construction vehicles to be operating. The TCPs define the use of warning signs, lights, barricades, cones, direction of travel, posted speed limit, location of temporary barricades, no parking restrictions, etc., according to standard guidelines outlined in the Caltrans Traffic Manual for Construction and Maintenance Work Zones (1996 edition, Revision 2), the Standard Specifications for Public Works Construction, the MUTCD, and the Work Area Traffic Control Handbook (WATCH).

Per the discretion of the City Traffic Engineer, the TCP may also provide measures to ensure that traffic congestion and delay resulting from project construction are minimized by incorporating features such as:

- *Staggered Shift Hours*

  During peak period of construction activity, construction shifts may be staggered to the degree possible, such that employee arrivals and departures from the site will avoid the project area peak hours (7:30a.m. to 8:30 a.m. and 4:30 p.m. to 5:30 p.m.).
- *Truck Scheduling*

  Construction-related truck traffic may be scheduled to avoid travel during peak periods of traffic on the surrounding roadways.

23.5 Project Specific Requirements

Based on the anticipated number of trucks, flagging and stopping traffic is not expected to be necessary. Most of the work will be behind protective barricades. If traffic volumes and safety concerns warrant, a temporary traffic signal will be installed.

Specific measures that will be incorporated into the traffic control plans include:

- Always keeping one lane open in each direction on Pacific Highway, Midway Dive, Sports Arena Boulevard and Barnett Avenue. Neither direction of travel will be closed at any given time.
- Carrying out construction activity during off-peak hours to the extent possible.
- Temporary traffic signals are not expected to be necessary but will be installed, should volumes and safety concerns warrant such an installation, once more specific traffic data is available.
- Providing easy-to-follow detour routes.
- Maintaining access to the nearby community.
- Providing plans showing freeway signage for advance warning of construction.

- Limiting to the extent possible the interruption of use for any pedestrian and bicycle facility in the area.

24.0 VEHICLE MILES TRAVELED

This section presents an evaluation of potential transportation impacts of the Proposed Action alternatives as proposed by the California Governor's Office of Planning and Research (OPR) to implement California State Law Senate Bill (S.B.) 743.

24.1 VMT Background

VMT is a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT measures the efficiency of the transportation network. VMT's are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round-trip) travel and is often estimated for a typical weekday to measure transportation impacts.

24.2 Senate Bill 743

In September 2013, the Governor's Office signed SB 743 into law, starting a process that fundamentally changes the way transportation impact analysis is conducted under CEQA. These changes include the elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The guidance identifies VMT as the most appropriate CEQA transportation metric, along with the elimination of Auto Delay/LOS for CEQA purposes statewide. The justification for this paradigm shift is that Auto Delay/LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions.

In December 2018, after over five years of stakeholder-driven development, the California Natural Resource Agency certified and adopted the CEQA Statute. Per the CEQA Statute, a lead agency may elect to be governed by the VMT guidelines immediately. However, beginning July 1, 2020, the VMT guidelines shall apply statewide.

24.3 CEQA Statute

The following is an excerpt from Section 15064.3 Determining the Significance of Transportation Impacts.

> Explanation of New Section 15064.3
>
> The new section 15064.3 contains several subdivisions, which are described below. In brief, these guidelines provide that transportation impacts of projects are, in general, best measured by evaluating the project's vehicle miles traveled. Methodologies for evaluating such impacts are already in use for most land use projects, as well as many transit and active transportation projects. Methods for evaluating vehicle miles traveled for roadway capacity projects continue to evolve, however, and so these Guidelines recognize a lead agency's discretion to analyze such projects, provided such analysis is consistent with CEQA and applicable planning requirements.

Subdivision (a): Purpose

Subdivision (a) sets forth the purpose of the entire new section 15064.3. First, the subdivision clarifies that the primary consideration, in an environmental analysis, regarding transportation is the amount and distance that a project might cause people to drive. This captures two measures of transportation impacts: auto trips generated and vehicle miles traveled. These factors were identified by the legislature in SB 743. The last sentence clarifies that automobile delay is not a significant effect on the environment.

Subdivision (b): Criteria for Analyzing Transportation Impacts

While subdivision (a) sets forth general principles related to transportation analysis, subdivision (b) focuses on specific criteria for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology.

Subdivision (b)(1): Land Use Projects

SB 743 did not authorize OPR to set thresholds, but it did direct OPR to develop Guidelines "for determining the significance of transportation impacts of projects[.]" (Pub. Resources Code, §21099(b)(2). Therefore, to provide guidance on determining the significance of impacts, subdivision (b)(1) describes factors that might indicate whether the amount of a project's vehicle miles traveled may be significant, or not. Notably, projects that locate within one-half mile of an existing major transit stop or a stop along an existing transit corridor should be presumed to have a less than significant transportation impact.

Subdivision (b)(2): Transportation Projects

While subdivision (b)(1) addresses vehicle miles traveled associated with land use projects, subdivision (b)(2) focuses on impacts that result from certain transportation projects. Subdivision (b)(2) clarifies that projects that reduce VMT, such as pedestrian, bicycle and transit projects, should be presumed to have a less than significant impact. This subdivision further provides that lead agencies have discretion in which measure to use to evaluate roadway, including highway, capacity projects, provided that any such analysis is consistent with the requirements of CEQA and any other applicable requirements (e.g., local planning rules). Importantly, this provision does not prohibit capacity expansion. Finally, recognizing that roadway capacity projects may be analyzed at a programmatic level, subdivision (b)(2) states that lead agencies may be able to tier from a programmatic analysis that adequately addresses the effects of such capacity projects.

Subdivision (b)(3): Qualitative Analysis

Subdivision (b)(3) recognizes that lead agencies may not be able to quantitatively estimate vehicle miles traveled for every project type. In those circumstances, this subdivision encourages lead agencies to evaluate factors such as the availability of transit, proximity to other destinations, and other factors that may affect the amount of driving required by the project.

Subdivision (b)(4): Methodology

Lead agencies have the discretion to choose the most appropriate methodology to analyze a project's vehicle miles traveled. Depending on the project, vehicle miles traveled may be best measures on a per person, per household or other similar unit of measurement. Subdivision (b)(4) also recognizes the role of both models and professional judgment in estimating vehicle miles traveled.

Subdivision (c): Applicability

The new procedures may be used immediately upon the effective date of these Guidelines by lead agencies that are ready to begin evaluating vehicle miles traveled, but jurisdictions will have approximately two years to switch to VMT if they so choose.

25.0 VMT SIGNIFICANCE CRITERIA & METHODOLOGY

25.1 Local / Regional Agency Transition to SB743

Local and regional agencies, as well as transportation professionals, have already begun transitioning to SB 743. The City of San Diego has published the draft *Transportation Study Manual (TSM)* in February 2020. San Diego's local Institute of Transportation Engineers (ITE) SB 743 Subcommittee published the *Guidelines for Transportation Impact Studies in the San Diego Region* in May 2020. Caltrans has also issued interim guidance on how CEQA documents are to be reviewed with SB 743. Though these documents have been published, they have yet to be officially adopted.

Given that the City of San Diego has developed significance thresholds and technical methodologies, the draft *TSM* was utilized for this chapter.

25.2 Significance Criteria

According to the City of San Diego's draft *TSM*, the transportation VMT thresholds of significance are shown in ***Table 25–1***.

TABLE 25–1
VMT SIGNIFICANCE THRESHOLDS

Land Use Type[1]	Thresholds for Determination of a Significant Transportation VMT Impact[2]
Residential	15% below regional average[3] resident VMT/Capita
Commercial Employment	15% below regional average[3] employee VMT/Employee
Industrial Employment	Regional average* employee VMT/Employee
Regional Retail	Zero net increase in total regional VMT[3]
Hotel	See Commercial Employment
Regional Recreational	See Regional Retail
Regional Public Facilities	See Regional Retail
Mixed-Use	Analyze each land use individually per above categories
Redevelopment	Apply the relevant threshold based on proposed land use (ignore the existing land use)
Transportation Projects	Zero net increase in total regional VMT[3]

Footnotes:

1. ***Appendix BB*** contains a copy of Appendix B of the draft City of San Diego TSM for specific land use designations.
2. Projects that exceed these thresholds would have a significant impact.
3. The regional average and total regional VMT are determined using the SANDAG Regional Travel Demand Model. The specific model version and model year will be identified by the Development Services Department's Transportation Development Section.

25.3 Technical Methodology

The technical approach for the Proposed Action alternatives is broken into the following two components.

- Screening Criteria
- SANDAG Model Regional Travel Demand Model

Screening Criteria

According to the draft *TSM*, a project that meets at least one of the following screening criteria would have less than significant VMT impact due to project characteristics and/or location.

1. **Residential or Commercial Project Located in a VMT Efficient Area:** The project is a residential or commercial employment project located in a VMT efficient area (15% or more below the base year average household VMT/capita or VMT/employee) based on the applicable location-based screening map produced by SANDAG.

2. **Industrial Project Located in a VMT Efficient Area:** The project is an industrial employment project located in VMT efficient area (in an area with average or below average base year VMT/employee) based on the applicable location-based screening map produced by SANDAG.

3. **Small Project:** The project is a small project defined as generating less than 300 daily unadjusted driveway trips using the City of San Diego trip generation rates/procedures.

4. **Locally Serving Retail/Recreational Project:** The project is a locally serving retail/recreational project defined as having 100,000 square feet gross floor area or less **and** demonstrates through a market area study that the market capture area for the project is approximately three miles (or less) and serves a population of roughly 25,000 people or less. Locally serving retail is consistent with the definitions of Neighborhood Shopping Center in the San Diego Municipal Code Land Development Code Trip Generation Manual. Locally serving recreation is consistent with the land uses listed in Appendix B of the draft *TSM*, given that it meets the square footage and market capture area above. Adding retail/recreation square footage (even if it is 100,000 square feet gross floor area or less) to an existing regional retail shopping area is **not** screened out.

5. **Locally Serving Public Facility:** The project is a locally serving public facility defined as a public facility that serves the surrounding community or a public facility that is a passive use. The following are considered locally serving public facilities: transit centers, public schools, libraries, post offices, park-and-ride lots, police and fire facilities, and government offices. Passive public uses include communication and utility buildings, water sanitation, and waste management.

6. **Affordable Housing:** The project has access to transit* and is wholly or has a portion that meets one of the following criteria: is affordable to persons with a household income equal to or less than 50% of the area median income (as defined by California Health and Safety Code Section 50093), housing for senior citizens [as defined in Section 143.0720(e)], housing for transitional foster youth, disabled veterans, or homeless persons [as defined in 143.0720(f)]. The units shall remain deed restricted for a period of at least 55 years. The project shall provide no more than the minimum amount of parking per unit, per San Diego Municipal Code Section 143.0744. Only the portion of the project that meets the above criteria is screened out. For example, if the project is 100 units with ten deed-restricted affordable housing units, transportation VMT analysis would not be necessary for the ten affordable units but would be necessary for the remaining 90 units (unless they meet one of the other screening criteria). For purposes of applying the small project screening criteria, the applicant would only include the trip generation for the non-affordable housing portion of the project (since the affordable housing portion is screened out).

   *Access to transit is defined as transit being located within a reasonable walking distance (1/2 mile) from the project driveway.

7. **Mixed-Use Project Screening Considerations:** The project's individual land uses should be compared to the screening criteria above. It is possible for some of the mixed-use project's land uses to be screened out and some to require further analysis. For purposes of applying the small project screening criteria, the applicant would only include the trip generation for portions of the project that are not screened out based on other screening criteria. For example, if a project includes residential and retail, and the retail component was screened out because it is locally serving; only the trip generation of the residential portion would be used to determine if the project meets the definition of a small project.

8. **Redevelopment Project Screening Considerations:** The project is a redevelopment project that demonstrates that the proposed project's total project VMT is less than the existing land use's total VMT. Exception: If a project replaces affordable housing (either deed restricted or other types of affordable housing) with a smaller number of moderate-income or high-income residential units, the project is not screened out and must analyze VMT impacts per *Table 25-1*.

In addition to the above screening criteria provided in the draft *TSM*, the CEQA Statute, Section 15064.3 subdivision (b)(1), states that a project proposed within ½ mile of an existing major transit stop or an existing stop along a highlight quality transit corridor should be presumed to cause a less than significant transportation impact.

Since the CEQA Statute does not further define the terms “1/2 mile”, “major transit stop”, and “high quality transit corridor”, the draft *TSM* or the OPR’s *Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory)* was utilized to provide clarity on these terms.

> *<u>½ mile</u> refers to the walking distance from the project driveway.*
>
> *<u>Major transit stop</u> refers to an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.*
>
> *<u>A high-quality transit corridor</u> refers to a corridor with a fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.*

SANDAG Regional Travel Demand Model

If a project is not screened out, a detailed transportation VMT analysis using the SANDAG Regional Travel Demand Model is required per the draft *TSM*. The regional SANDAG forecast model is based on the 2050 Regional Transportation Plan (RTP) that was adopted by the Board of Directors on October 15, 2013. This forecast model serves as the foundation for *San Diego Forward: The Regional Plan* and other planning documents across the region. In developing the RTP, the "Series 13" traffic forecast model series was prepared. For the Proposed Action alternatives, the VMT calculations were conducted using Series 13, which is an Activity Based Model (ABM). The ABM was developed using travel behavior survey information from the San Diego Household Travel Behavior Surveys, data from the Community Survey, U.S. Census Bureau and the most current traffic and transit observations that were available at the time the model was prepared.

Table 25–2 further details the methodology based on the land use per the draft *TSM*.

TABLE 25–2
TRANSPORTATION VMT ANALYSIS METHODOLOGY BY LAND USE

Land Use Type	Thresholds for Determination of a Significant Transportation VMT Impact
Residential	**For projects that generate less than 2,400 daily unadjusted driveway trips:** Identify the location of the project on the SANDAG Resident VMT/Capita map. The project's Resident VMT/Capita will be considered the same as the Resident VMT/Capita of the census tract it is located in. Compare the project's Resident VMT/Capita to the threshold to determine if the impact is significant OR input the project into the SANDAG Regional Travel Demand Model to determine the project's Resident VMT/Capita. **For projects that generate greater than 2,400 daily unadjusted driveway trips:** Input the project into the SANDAG Regional Travel Demand Model for SANDAG to provide the project's Resident VMT/Capita. To perform the analysis, all project land uses should be inputted, and the VMT/Capita should be determined using the same method/scripts that SANDAG utilizes to develop the SANDAG Resident VMT/Capita maps.
Commercial Employment	**For projects that generate less than 2,400 daily unadjusted driveway trips:** Identify the location of the project on the SANDAG Employee VMT/Employee map. The project's Employee VMT/Employee will be considered the same as the Employee VMT/Employee of the census tract it is located in. Compare the project's Employee VMT/Employee to the threshold to determine if the impact is significant OR input the project into the SANDAG Regional Travel Demand Model to determine the project's Employee VMT/Employee. **For projects that generate greater than 2,400 daily unadjusted driveway trips:** Input the project into the SANDAG Regional Travel Demand Model for SANDAG to provide the project's Employee VMT/Employee. To perform the analysis, all project land uses should be inputted, and the VMT/Capita should be determined using the same method/scripts that SANDAG utilizes to develop the SANDAG Employee VMT/Employee maps.
Industrial Employment	**For projects that generate less than 2,400 daily unadjusted driveway trips:** Identify the location of the project on the SANDAG Employee VMT/Employee map. The project's Employee VMT/Employee will be considered the same as the Employee VMT/Employee of the census tract it is located in. Compare the project's Employee VMT/Employee to the threshold to determine if the impact is significant OR input the project into the SANDAG Regional Travel Demand Model to determine the project's Employee VMT/Employee. **For projects that generate greater than 2,400 daily unadjusted driveway trips:** Input the project into the SANDAG Regional Travel Demand Model to determine the project's Employee VMT/Employee. To perform the analysis, all project land uses should be inputted, and the VMT/Capita should be determined using the same method/scripts that SANDAG utilizes to develop the SANDAG Employee VMT/Employee maps.

TABLE 25–2
TRANSPORTATION VMT ANALYSIS METHODOLOGY BY LAND USE

Land Use Type	Thresholds for Determination of a Significant Transportation VMT Impact
Regional Retail	Calculate the change to regional VMT using the SANDAG Travel Demand Model. To calculate the change in regional VMT, the regional retail component of the project should be inputted into the travel demand model (year that is used to determine the VMT thresholds). The "with project regional retail" regional VMT produced by the model run is compared to the "no project" regional VMT.
Hotel	See Commercial Employment
Regional Recreational	See Regional Retail
Regional Public Facilities	See Regional Retail
Mixed-Use	Analyze each land use individually per above categories
Redevelopment	Analyze each land use individually per above categories Exception: If a project replaces affordable housing (either deed restricted or other affordable housing) with a smaller number of moderate-income or high-income residential units, the VMT assessment should incorporate an estimate of the aggregate VMT increase experienced by the displaced residents. The additional VMT due to displaced residents should be incorporated into the Resident VMT/Capita for the project.
Transportation Projects	Calculate the change to regional VMT using the SANDAG Travel Demand Model. To calculate the change in regional VMT, the roadway network in the model should be adjusted to include the proposed transportation project. The "with transportation project" regional VMT produced by the model run is compared to the "no transportation project" regional VMT do determine if there is an increase in regional VMT.

26.0 VMT ANALYSIS

26.1 Screening Criteria

Based on the screening criteria described in *Section 25.3*, draft *TSM* Criteria 1, 8, and 9, as well as the CEQA Statute Criteria, are applicable.

Residential or Commercial Project Located in a VMT Efficient Area: The Proposed Action alternatives propose a mix of residential and commercial land use. Based on the location-based screening map produced by SANDAG, the residential and commercial components of Proposed Action alternatives are located in an area that is 25.5% and 10.6% below the regional mean, respectively. Therefore, only the residential component of the Proposed Action alternatives is screened out.

Mixed-Use Project Screening Considerations: As evaluated above, this consideration to compare the individual land uses to the screening criteria is applied. Since only the residential portion of the Proposed Action alternatives is screened out, further VMT analysis is needed.

Redevelopment Project Screening Considerations: The Proposed Action alternatives total VMT is expected to be greater than the existing total VMT. Therefore, further VMT analysis is needed.

CEQA Statute Criteria: The Old Town Transit Center was identified to be a major transit center. ***Table 25–1*** tabulates the distance from the Proposed Action Alternative to the Old Town Transit Center.

Based on the above screening criteria evaluation, the Proposed Action alternative is presumed to have a **less than significant** transportation impact.

Table 26–2 summarizes the screening criteria results.

TABLE 26–1
DISTANCE TO MAJOR TRANSIT STOP

Proposed Action Alternative	Distance to Old Town Transit Center
Year 2050 with Alternative 1: Navy Recapitalization at OTC	½ mile[1]
Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization	½ mile[1]
Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization	½ mile[1]
Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center	Within the Site
Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center	Within the Site

Footnotes:

1. Walking distance measured from the existing OTC driveway to the existing Old Town Transit Center driveway.

TABLE 26–2
SCREENING CRITERIA RESULTS

Proposed Action Alternative	Screened out per draft *TSM*?	Screened out Per CEQA?
Year 2050 with Alternative 1: Navy Recapitalization at OTC	No	Yes
Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization	No[1]	Yes
Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization	No[1]	Yes
Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center	No[1]	Yes
Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center	No[1]	Yes

Footnotes:

1. The "No" designation is applicable to the retail, office and hotel land use components of the Proposed Action alternatives. The residential land use component was screened out based on the SANDAG screening maps.

26.2 SANDAG Regional Travel Model

The SANDAG Regional Travel Model Series 13 was utilized based on a methodology developed by SANDAG to implement SB 743. ***Table 26–3*** tabulates the VMT per resident model results for the region and Proposed Action alternatives. ***Table 26–4*** tabulates the VMT per employee model results for the region and Proposed Action alternatives. ***Appendix CC*** contains SANDAG Regional Travel Model VMT reports.

Since the Proposed Action alternative VMT/resident and VMT/employee are less than their respective significance thresholds, the Proposed Action alternatives would have a **less than significant** VMT impact.

TABLE 26–3
VMT PER RESIDENT REGIONAL COMPARISON

Proposed Action Alternative	Region[1]	Threshold[2]	Proposed Action	Impact?
Year 2050 with Alternative 1: Navy Recapitalization at OTC	14.4	12.2	NA[3]	NA[3]
Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization			6.6	No
Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization			8.0	No
Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center			4.5	No
Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center			5.3	No

Footnotes:

1. Based on the SANDAG Regional Travel Model output for the Year 2050 no build scenario.
2. Based on 15% below the Regional VMT Average.
3. N.A. = Not Applicable

TABLE 23–4
VMT PER EMPLOYEE REGIONAL COMPARISON

Proposed Action Alternative	Region[1]	Threshold[2]	Project	Impact?
Year 2050 with Alternative 1: Navy Recapitalization at OTC	21.2	18.0	13.6	No
Year 2050 with Alternative 2: Higher-density Mixed-use Revitalization			12.8	No
Year 2050 with Alternative 3: Lower-density Mixed-use Revitalization			13.5	No
Year 2050 with Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center			11.1	No
Year 2050 with Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center			11.5	No

Footnotes:
1. Based on the SANDAG Regional Travel Model output for the Year 2050 no build scenario.
2. Based on 15% below the Regional VMT Average.

26.3 VMT Analysis Summary

Based on the VMT analysis, the Proposed Action alternatives is presumed to have a less than significant transportation impact. Furthermore, a detailed evaluation of the VMT produced by Proposed Action alternatives are calculated to be less than significant. ***Table 26–5*** summarizes the VMT impact findings

TABLE 26–5
VMT IMPACT SUMMARY

Analysis Methodology	Transportation Impact Findings
Screening Criteria	Presumed Less than Significant
SANDAG Regional Travel Demand Model	Less than Significant

27.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length to help achieve more efficient and sustainable transportation facilities. TDM can help reduce the single-occupant vehicles (SOV) vehicular trips which in turn would help reduce trips by the Proposed Action alternative by providing users with options to alternative forms of transportation and providing users with information about programs and services. TDM can be beneficial to all users, including residents, employees, guests, property owners/managers, and the community as a whole.

This document provides a list of possible TDM measures that can be implemented by the Proposed Action alternatives. The list of possible TDM measures were obtained from the City of San Diego's draft *Transportation Study Manual*, June 2020. Strategies are categorized as primary (P) or supportive (S). A primary strategy that can be directly calculated using California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures* report, August 2020. Supportive strategies boost participation or eligibility rates and make the primary strategy more effective.

Below is the list of possible TDM measures organized into four (4) categories identified as "P" primary measures, or "S" supplemental measures accompanying a "P" measure. It should be noted that some of the measures may require a detailed site plan to further conduct a quantification assessment.

1. *Neighborhood / Site Enhancements*
    a. Bicycle Infrastructure Improvement (P)
    b. Bike Share/Micromobility Fleet (P)
    c. Bicycle Riders Guide (S)
    d. Electric Bicycle/Micromobility (S)
    e. Subsidized Bicycle Expenses (S)
    f. Bicycle Parking (S)
    g. Bicycle Supportive Programs (S)
    h. DIY Bicycle Repair Stands (S)
    i. Onsite Showers and Lockers (S)
    j. Pedestrian Network Improvements (P)
    k. Walking Supportive Programs (S)
    l. Subsidized Walking Expenses (S)
    m. Traffic Calming (P)
    n. Car Share (P)
    o. Passenger Loading Zones (S)
    p. Mobility Hub (S)

2. *Parking Policy / Pricing*
    a. Limit Parking Supply (P)

b. Unbundled Parking (P)
c. Priced Public Parking (P)
d. Parking Cash-Out Program (P)
e. Residential Area Parking Permit (S)
f. Time-Limited Street Parking (S)
g. Real-Time Parking Information (S)

3. *Commute Trip Reduction Programs*
   a. Commute Trip Reduction Program
      - Carpooling Program and Encouragement (P)
      - Alternative Work Schedules (P)
      - Vanpool Program (P)
      - Transportation Coordinator (S)
      - Preferential Carpool Parking (S)
      - Bicycle End Trip Facilities (S)
      - Transit Pass Subsidy (P)
      - Commute Trip Reduction Marketing (P)
      - Car Share (P)
   b. Transit Pass Subsidy (P)
   c. Price Workplace Parking (P)
   d. Telecommuting (P)
   e. Commute Trip Reduction Marketing (P)
   f. Guaranteed Ride Home Program (S)
   g. Last Mile Connections (S)

While other development projects have taken quantifiable credit for the implementation of TDM, ranging from two to four percent (SDIA Airport Development Plan) to 10 to 15 percent (e.g. SDSU Mission Valley Campus Master Plan EIR = 14.4%), no quantifiable credit was taken for the implementation of TDM mitigation measures for the Proposed Action alternatives. Nonetheless, a comprehensive TDM plan is recommended to be prepared for the Proposed Action alternatives.

It is recommended that the comprehensive TDM plan be tailored depending on whether transit is consolidated at the OTC Site.

It is recommended that the following process be established for future project-specific level clearances. Prior to approval of any discretionary project that is forecast to generate more than 100 peak hour trips, the project developers shall prepare a TDM program that is designed to reduce generated traffic and help lessen traffic impacts on study area intersections, street segments, and freeway segments. A key component of the TDM Program is to make employers and employees of the project site aware of the various programs offered. To this end, a Transportation Management Coordination Program (TMCP) would reach out to employers and employees to directly promote the benefits of TDM. The TMCP would be responsible for maintaining a website which would offer ride-matching services, transit information, and serve as a passive source of information for those interested in TDM. A Transportation Information Center would be maintained on the OTC Site, where employers and employees can obtain information about commuter programs and real-time information for planning travel without the use of an automobile.

Once the TDM Program is implemented, project developers would provide a quantitative assessment of the reduction of trips from the program and information on implementation and monitoring as part of their annual reporting obligations.

28.0 TRANSPORTATION SYSTEMS MANAGEMENT

The City of San Diego includes future traffic signal communication network elements in their Traffic Signal Communications Master Plan (2014). Part of the Master Plan would be to implement an Intelligent Transportation Systems (ITS) program on key transportation corridors within the City. ITS enables intersections to operate as part of a coordinated system, allows for remote intersection monitoring from the City's Traffic Management Center, and provides flexibility to remotely change signal timings from the Traffic Management Center in response to changes in traffic flows or incidents. ITS provides a fully responsive traffic signal system based on real time traffic conditions that can provide instantaneous traffic information and predictive time information to users along access corridors. Additionally, ITS will increase mobility at intersections for all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles.

Intersection improvements designed to address the significant impacts of the Proposed Action alternatives consist of the design, the construction, and integration of ITS improvements, which include, but are not limited to: vehicle detection, computer hardware and networking, fiber-optic communication system upgrades, closed circuit TV cameras, changeable message signs, blank-out signs, equipment and networking management, traffic signal modifications, Traffic Management Center and Decision Support System integration, software licensing, high resolution data, connected vehicle technology, upgrading outdated software and equipment, adaptive traffic signal controllers and cabinets, lane control management, and other improvements to the ITS network. The ITS improvements would focus on intersections along corridors potentially affected by the Proposed Action alternatives, specifically those where physically widening roadways would not be feasible.

It is recommended that the following process be established for future project-specific level clearances. Prior to approval of any discretionary project that is forecast to generate more than 100 peak hour trips, the project developers shall prepare a traffic improvement analysis for any facilities under the jurisdiction of the City of San Diego at which the project is anticipated to contribute more than 50 peak hour trips and where a significant unavoidable impact was calculated in this report. ITS improvements should be considered if transportation analysis demonstrates such improvements can achieve acceptable vehicle LOS.

Table 28–1 below comprises intersections and segments where significant unavoidable impacts were calculated that would benefit from TSM and TDM measures. These locations would be benefitted by TSM and TDM under all Proposed Action alternatives:

TABLE 28–1
SIGNIFICANT/UNAVOIDABLE IMPACTS
BENEFITING FROM TSM AND TDM

Location	Alternative 4 Impact ID
INTERSECTIONS	
2. Taylor St/ I-8 EB Ramps	Alt 4-I-1
7. Rosecrans St/ Jefferson St	Alt 4-I-3
11. Rosecrans St/ Sports Arena Blvd/ Camino Del Rio W	Alt 4-I-5
12. Rosecrans St/ Midway Dr	Alt 4-I-6
13. Midway Dr/ Enterprise St	Alt 4-I-9
14. Barnett Ave/ Midway Dr	Alt 4-I-10
18. Pacific Hwy/ Kurtz St	Alt 4-I-11
20. Pacific Hwy/ Enterprise St	Alt 4-I-13
22. Old Town Ave/ San Diego Ave	Alt 4-I-14
23. Old Town Ave/ Moore St	Alt 4-I-15
33. Pacific Hwy/ Sassafras St	Alt 4-I-23
34. Pacific Hwy / Laurel St	Alt 4-I-24
35. Harbor Dr / Laurel St	Alt 4-I-25
STREET SEGMENTS	
Taylor Street	
9. Presidio Dr to I-8 East Ramp	Alt 4-S-6
Pacific Highway	
13. Kurtz St to Sports Arena Blvd	Alt 4-S-8
14. Sports Arena Blvd to Barnett Ave	Alt 4-S-9
17. W. Washington St to Sassafras St	Alt 4-S-12
Morena Boulevard	
19. Friars Rd to I-8	Alt 4-S-13
Midway Drive	
26. East Dr to Rosecrans St	Alt 4-S-17
28. Bogley Dr to Barnett Ave	Alt 4-S-19
W. Washington Street	
37. Hancock St to W. University Ave	Alt 4-S-25
FREEWAY SEGMENTS	
I-5: I-8 to Old Town Ave	Alt 4-F-1
I-5: Pacific Hwy Viaduct to Laurel St	Alt 4-F-2
I-5: Laurel St to Hawthorn St	Alt 4-F-3
I-5: Hawthorn St to 1st Ave	Alt 4-F-4
I-5: 1st Ave to 6th Ave	Alt 4-F-5
I-5: 6th Ave to SR-163	Alt 4-F-6
I-8: I-5 to Morena Blvd	Alt 4-F-7
I-8: Morena Blvd to Hotel Circle/Taylor Street	Alt 4-F-8
I-8: Hotel Circle/Taylor St to Hotel Circle	Alt 4-F-9

TABLE 28–1
SIGNIFICANT/UNAVOIDABLE IMPACTS
BENEFITING FROM TSM AND TDM

I-8: Hotel Circle to SR-163	Alt 4-F-10

General Notes:

1. Impacts shown are listed as Alternative 4 impacts given Alternative 4 is the highest density, worst-case analysis in this report. Implementation of TSM and TDM applies to all Proposed Action alternative significant/unavoidable impacts.
2. Freeway impacts would benefit from the implementation of TDM measures for all Proposed Action alternative significant/unavoidable impacts.

29.0 CONCLUSIONS

The Navy OTC Revitalization project proposes to revitalize NAVBASE Point Loma's OTC site located north of downtown San Diego and south of Old Town San Diego, approximately 1/2-mile north of San Diego International Airport. OTC comprises two sites totaling 70.5 acres: OTC Site 1 is 48.7 acres and OTC Site 2 is 21.8 acres. OTC Site 1 is bordered by Pacific Highway to the west, Interstate 5 to the north and east, a railroad right-of-way to the east, and Barnett Avenue to the south. OTC Site 2 is adjacent to OTC Site 1 to the west. OTC Site 2 is bordered by Midway Drive to the west, Rosecrans Street to the North, Pacific Highway to the east, and Barnett Avenue to the south.

The Proposed Action would revitalize OTC through demolition and construction of buildings, utilities, and infrastructure to provide secure, safe, modern state-of-the-art facilities to meet NAVWAR's operational mission. The revitalization of OTC may be accomplished through Navy recapitalization or a number of public-private development scenarios. Through the alternative development process, five action alternatives were identified that meet the purpose and need for the Proposed Action. One action alternative analyzes recapitalization of OTC with Navy funds, and four action alternatives analyze revitalization of OTC with various densities in collaboration with a private developer.

In addition to the No Action alternative, the following five action alternatives were analyzed in this report:

- Alternative 1: Navy Recapitalization at OTC
- Alternative 2: Higher-density Mixed-use Revitalization
- Alternative 3: Lower-density Mixed-use Revitalization
- Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center
- Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center

Below are the number of impacts calculated for each Proposed Action alternative based on the analysis performed in this report:

Proposed Action Alternative	**No. of Impacts**					
	Intersections	**Segments**	**Freeways**	**Ramp Meters**	**VMT per Capita**	**VMT per Employee**
CUMULATIVE IMPACTS						
Year 2050 with Alternative 1	8	1	0	0	0	0
Year 2050 with Alternative 2	25	25	10	1	0	0
Year 2050 with Alternative 3	23	25	10	1	0	0
Year 2050 with Alternative 4	26	25	10	1	0	0
Year 2050 with Alternative 5	26	25	10	1	0	0
DIRECT IMPACTS						
Year 2030 with Alternative 2 (25%) (worst-case highest intensity development)	13	12	7	1	0	0

In total, 36 intersections, 37 segments, 15 freeway segments and one ramp meter were analyzed, for a grand total of 89 facilities. VMT impacts were analyzed using VMT per capita and VMT per employee metrics for each Proposed Action alternative. Active transportation modes such as pedestrian, bicycle and transit were evaluated and recommendations were made for enhancing existing facilities.

Implementation of Alternative 1 would have the fewest impacts to the study area locations in this report. Mitigation measures are recommended for the nine total impacted locations, of which five would be fully mitigated and four impacts would remain significant and unavoidable.

Implementation of Alternative 2 would result in 61 significant impacts. Mitigation measures are recommended for the 61 total impacted locations, of which 32 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Implementation of Alternative 3 would result in slightly fewer significant impacts than Alternative 2. Mitigation measures are recommended for the 59 total impacted locations, of which 33 would be fully mitigated and 26 impacts would remain significant and unavoidable.

Implementation of Alternative 4 would result in the similar significant impacts as Alternatives 2 & 3. Mitigation measures are recommended for the 62 total impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Implementation of Alternative 5 would result in the same significant impacts as Alternative 4. Mitigation measures are recommended for the 62 total impacted locations, of which 33 would be fully mitigated and 29 impacts would remain significant and unavoidable.

Together with Caltrans, SANDAG has prepared a concept plan for reconstructing the I-5/Old Town Avenue interchange. As part of this major infrastructure improvement, the existing I-5/Old Town Avenue interchange would be replaced with a new bridge and reconfigured on- and off-ramps. This project would include: a high-occupancy vehicle (HOV) direct access ramp into the future on-site transit center to/from southbound I-5 (assuming the transit center is consolidated on the OTC Site); direct access ramps to the OTC Site to/from I-5, the reconstruction and widening of the I-5/Old Town Avenue interchange; and the realignment and signalization of the Pacific Highway/Barnett Avenue intersection. With the enhanced capacity of the new interchange and direct access to the site, traffic volumes accessing the OTC Site would shift to the new interchange, thus reducing volumes on Pacific Highway, Camino Del Rio W., Hancock Street, Witherby Street and surrounding surface streets. Construction of the interchange improvements would mitigate several impacts in the immediate vicinity of the OTC Site.

Figure 29–1 provides a concept plan of the interchange improvements.

Transportation Demand Management and Transportation Systems Management measures are recommended in this report. TDM can help reduce the single-occupant vehicles (SOV) vehicular trips which in turn would help reduce trips by the Proposed Action alternative by providing users with options to alternative forms of transportation and providing users with information about programs and services. TDM can be beneficial to all users, including residents, employees, guests, property owners/managers, and the community as a whole.

TSM can be implemented through Intelligent Transportation Systems (ITS) improvements. ITS provides a fully responsive traffic signal system based on real time traffic conditions that can provide instantaneous traffic information and predictive time information to users along access corridors. Additionally, ITS will increase mobility at intersections for all modes of travel including motorists, bicyclists, pedestrians, transit and emergency vehicles.

Preparation of a Transportation Demand Management (TDM) Plan and participation in the implementation of Transportation Systems Management (TSM) measures are proposed in this report as partial mitigation at locations with significant and unavoidable impacts.

Recommendations for pedestrian, bicycle and transit modes of transportation are categorized as "Tier 1" and "Tier 2" improvements. Tier 1 improvements are recommended to be implemented by the Proposed Action alternatives as mitigation measures, and Tier 2 improvements are recommended for consideration. In total, 13 pedestrian and bicycle improvements are recommended to be implemented and 13 pedestrian and bicycle improvements are recommended to be considered. For the transit network, four improvements are recommended to be further evaluated for feasibility of implementation.

The VMT analysis provided in this report concludes no significant VMT impacts would occur with development of the Proposed Action alternatives.

Figure 29-1 SANDAG Interchange Concept

0 0.15 0.3
Miles

End of Report

LINSCOTT LAW & GREENSPAN engineers

TECHNICAL APPENDICES
NAVY OLD TOWN CAMPUS REVITALIZATION

San Diego, California
September 22, 2020

LLG Ref. 3-19-3171

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APPENDIX A

INTERSECTION METHODOLOGY

HIGHWAY CAPACITY 6th EDITION MANUAL
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

In the Highway Capacity Manual 6th Edition (HCM 6), Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level of Service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

LEVEL OF SERVICE	CONTROLLED DELAY PER VEHICLE (SEC)		
A		≤	10.0
B	10.1	to	20.0
C	20.1	to	35.0
D	35.1	to	55.0
E	55.1	to	80.0
F		>	80.0

Level of Service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in the level. The number of vehicles stopping is significant at this level, although many still pass through the intersections without stopping.

Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e. when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

HIGHWAY CAPACITY 6th EDITION MANUAL
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

In the Highway Capacity Manual 6th Edition (HCM 6), Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. Level of Service is not defined for the intersection as a whole. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The criteria are given in the following the table, and are based on the average control delay for any particular minor movement.

LEVEL OF SERVICE	AVERAGE CONTROL DELAY SEC/VEH			EXPECTED DELAY TO MINOR STREET TRAFFIC
A	0.0	$\leq$	10.0	Little or no delay
B	10.1	to	15.0	Short traffic delays
C	15.1	to	25.0	Average traffic delays
D	25.1	to	35.0	Long traffic delays
E	35.1	to	50.0	Very long traffic delays
F		>	50.0	Severe congestion

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This Level of Service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form on side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

In most cases at Two-Way Stop Controlled (TWSC) intersections, the critical movement is the minor-street left-turn movement. As such, the minor-street left-turn movement can generally be considered the primary factor affecting overall intersection performance. The lower threshold for LOS F is set at 50 seconds of delay per vehicle. There are many instances, particularly in urban areas, in which the delay equations will predict delays of 50 seconds (LOS F) or more for minor-street movements under very low volume conditions on the minor street (less than 25 vehicle/hour). Since the first term of the equation is a function only of the capacity, the LOS F threshold of 50 sec/vehicle is reached with a movement capacity of approximately 85 vehicle/hour or less.

This procedure assumes random arrivals on the major street. For a typical four-lane arterial with average daily traffic volumes in the range of 15,000 to 20,000 vehicles per day (peak hour, 1,500 to 2,000 vehicle/hour), the delay equation used in the TWSC capacity analysis procedure will predict 50 seconds of delay or more (LOS F) for many urban TWSC intersections that allow minor-street left-turn movements. **The LOS F threshold will be reached regardless of the volume of minor-street left-turn traffic.** Not-withstanding this fact, most low-volume minor-street approaches would not meet any of the volume or delay warrants for signalization of the *Manual on Uniform Traffic Control Devices* (MUTCD) since the warrants define an asymptote at 100 vehicle/hour on the minor approach. As a result, many public agencies that use the HCM 6 Level of Service thresholds to determine the design adequacy of TWSC intersections may be forced to eliminate the minor-street left-turn movement, even when the movement may not present any operational problem, such as the formation of long queues on the minor street or driveway approach.

APPENDIX B

CALTRANS RAMP METERING DATA AND TRAFFIC VOLUMES

Location (I.D.)	Route	Dir	Period	Cars per green	Sec./ Cycle	(per lane) Veh./hr	Total # lanes	HOV
Old Town Ave to 5 SB (ID 10411)	5	SB	15:00 - 19:00	1	6.32 - 10.24	570 -352	1	No
Old Town Ave/Moore to 5 NB (ID 10301)	5	NB	05:30 - 09:30	1	6.32 - 10.72	570 - 335	2	No
			15:00 -19:00		6.32 - 11.32	570 - 318		
Hancock St to 5 SB (ID 10407)	5	SB	15:00 -19:00	1	6.32 - 10.24	570 - 352	2	No
Washington St/San Diego Ave to 5 NB (ID 10409)	5	NB	05:30 -09:30	2	7.23 - 14.63	996 - 492	2	Rt
			15:00 - 19:00		7.23 - 14.63	996 - 492		
Kettner Blvd to 5 SB (ID 10403)	5	SB	15:00 - 19:00	2	7.23 - 12.88	996 - 559	1	No
India St to 5 NB (ID 10408)	5	NB	05:30 - 09:30	2	7.23 - 11.81	996 - 610	2	No
			15:00 - 19:00		7.23 - 13.27	996 - 542		

The meters normally operate in a traffic responsive mode.
There are 15 separate rates or steps between the slowest and the fastest discharge rate that depend on the mainlane volumes.

5 Minutes	Flow (Veh/5 Minutes)
9/18/2019 16:00	27
9/18/2019 16:05	20
9/18/2019 16:10	12
9/18/2019 16:15	25
9/18/2019 16:20	22
9/18/2019 16:25	18
9/18/2019 16:30	24
9/18/2019 16:35	20
9/18/2019 16:40	22
9/18/2019 16:45	8
9/18/2019 16:50	12
9/18/2019 16:55	14
9/18/2019 17:00	15
9/18/2019 17:05	8
9/18/2019 17:10	12
9/18/2019 17:15	19
9/18/2019 17:20	16
9/18/2019 17:25	9
9/18/2019 17:30	21
9/18/2019 17:35	14
9/18/2019 17:40	9
9/18/2019 17:45	16
9/18/2019 17:50	16
9/18/2019 17:55	7

Report Description

Report	Aggregates>Time Series
Route Name	
Route Description	
Report link	http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&tab=d
Report generated	02/03/2020 11:30
PeMS version	caltrans_pems-19.0.0

Report Parameters

Parameter	Value
Quantity	Flow
Data	288 Lane Points
Data Quality	100% Observed
Segment Type	VDS
Segment Name	On Ramp VDS 1108616 - OLD TOWN AVE
start date	09/18/2019 00:00:00
end date	09/18/2019 23:59:59
Day of Week	We,Sa
Granularity	5min

5 Minutes	Flow (Veh/5 Min
9/18/2019 7:00	14
9/18/2019 7:05	17
9/18/2019 7:10	15
9/18/2019 7:15	11
9/18/2019 7:20	17
9/18/2019 7:25	15
9/18/2019 7:30	27
9/18/2019 7:35	24
9/18/2019 7:40	24
9/18/2019 7:45	25
9/18/2019 7:50	24
9/18/2019 7:55	25
9/18/2019 8:00	26
9/18/2019 8:05	26
9/18/2019 8:10	18
9/18/2019 8:15	18
9/18/2019 8:20	17
9/18/2019 8:25	19
9/18/2019 8:30	28
9/18/2019 8:35	16
9/18/2019 8:40	20
9/18/2019 8:45	20
9/18/2019 8:50	19
9/18/2019 8:55	19
9/18/2019 16:00	35
9/18/2019 16:05	39
9/18/2019 16:10	32
9/18/2019 16:15	25
9/18/2019 16:20	33
9/18/2019 16:25	34
9/18/2019 16:30	28
9/18/2019 16:35	30
9/18/2019 16:40	35
9/18/2019 16:45	30
9/18/2019 16:50	32
9/18/2019 16:55	26
9/18/2019 17:00	39
9/18/2019 17:05	40
9/18/2019 17:10	45
9/18/2019 17:15	32
9/18/2019 17:20	29
9/18/2019 17:25	31
9/18/2019 17:30	33
9/18/2019 17:35	27
9/18/2019 17:40	27
9/18/2019 17:45	31
9/18/2019 17:50	24
9/18/2019 17:55	26

PeMS Report Description

Report Description

	Report	Aggregates>Time Series
	Route Name	
	Route Description	
	Report link	***http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&t***
	Report generated	02/03/2020 13:37
	PeMS version	caltrans_pems-19.0.0

Report Parameters

	Parameter	Value
	Quantity	Flow
	Data	576 Lane Points
	Data Quality	50% Observed
	Segment Type	VDS
	Segment Name	On Ramp VDS 1108618 - MOORE ST
	start date	09/18/2019 00:00:00
	end date	09/18/2019 23:59:59
	Day of Week	Mo,Tu,We,Th,Fr
	Granularity	5min

5 Minutes	Flow (Veh/5 Minutes)
9/4/2019 16:00	29
9/4/2019 16:05	29
9/4/2019 16:10	22
9/4/2019 16:15	17
9/4/2019 16:20	24
9/4/2019 16:25	23
9/4/2019 16:30	31
9/4/2019 16:35	34
9/4/2019 16:40	34
9/4/2019 16:45	24
9/4/2019 16:50	28
9/4/2019 16:55	16
9/4/2019 17:00	21
9/4/2019 17:05	35
9/4/2019 17:10	30
9/4/2019 17:15	25
9/4/2019 17:20	35
9/4/2019 17:25	22
9/4/2019 17:30	20
9/4/2019 17:35	21
9/4/2019 17:40	24
9/4/2019 17:45	21
9/4/2019 17:50	21
9/4/2019 17:55	15

PeMS Report Description

Report Description

	Report	Aggregates>Time Series
	Route Name	
	Route Description	
	Report link	***http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&t***
	Report generated	02/03/2020 11:57
	PeMS version	caltrans_pems-19.0.0

Report Parameters

	Parameter	Value
	Quantity	Flow
	Data	576 Lane Points
	Data Quality	100% Observed
	Segment Type	VDS
	Segment Name	On Ramp VDS 1108610 - HANCOCK ST
	start date	09/04/2019 00:00:00
	end date	09/04/2019 23:59:59
	Day of Week	Mo,Tu,We,Th,Fr
	Granularity	5min

Report Data

5 Minutes	Flow (Veh/5 Minutes)
9/4/2019 7:00	56
9/4/2019 7:05	41
9/4/2019 7:10	48
9/4/2019 7:15	57
9/4/2019 7:20	65
9/4/2019 7:25	60
9/4/2019 7:30	65
9/4/2019 7:35	67
9/4/2019 7:40	61
9/4/2019 7:45	68
9/4/2019 7:50	60
9/4/2019 7:55	62
9/4/2019 8:00	46
9/4/2019 8:05	68
9/4/2019 8:10	77
9/4/2019 8:15	68
9/4/2019 8:20	69
9/4/2019 8:25	64
9/4/2019 8:30	58
9/4/2019 8:35	70
9/4/2019 8:40	58
9/4/2019 8:45	52
9/4/2019 8:50	65
9/4/2019 8:55	61
9/4/2019 16:00	54
9/4/2019 16:05	52
9/4/2019 16:10	75
9/4/2019 16:15	52
9/4/2019 16:20	70
9/4/2019 16:25	60
9/4/2019 16:30	39
9/4/2019 16:35	49
9/4/2019 16:40	73
9/4/2019 16:45	51
9/4/2019 16:50	53
9/4/2019 16:55	50
9/4/2019 17:00	41
9/4/2019 17:05	53
9/4/2019 17:10	48
9/4/2019 17:15	44
9/4/2019 17:20	50
9/4/2019 17:25	47
9/4/2019 17:30	45
9/4/2019 17:35	42
9/4/2019 17:40	42
9/4/2019 17:45	52
9/4/2019 17:50	42
9/4/2019 17:55	47

PeMS Report Description

Report Description

Report	Aggregates>Time Series
Route Name	
Route Description	
Report link	***http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&t***
Report generated	02/03/2020 13:43
PeMS version	caltrans_pems-19.0.0

Report Parameters

Parameter	Value
Quantity	Flow
Data	576 Lane Points
Data Quality	100% Observed
Segment Type	VDS
Segment Name	On Ramp VDS 1108614 - WASHINGTON ST
start date	09/04/2019 00:00:00
end date	09/04/2019 23:59:59
Day of Week	Mo,Tu,We,Th,Fr
Granularity	5min

Report Data

5 Minutes	Lane 1 Flow (Ve
9/11/2019 16:00	62
9/11/2019 16:05	58
9/11/2019 16:10	59
9/11/2019 16:15	56
9/11/2019 16:20	55
9/11/2019 16:25	57
9/11/2019 16:30	58
9/11/2019 16:35	60
9/11/2019 16:40	55
9/11/2019 16:45	56
9/11/2019 16:50	56
9/11/2019 16:55	56
9/11/2019 17:00	58
9/11/2019 17:05	59
9/11/2019 17:10	56
9/11/2019 17:15	55
9/11/2019 17:20	56
9/11/2019 17:25	54
9/11/2019 17:30	59
9/11/2019 17:35	58
9/11/2019 17:40	60
9/11/2019 17:45	57
9/11/2019 17:50	59
9/11/2019 17:55	53

PeMS Report Description

Report Description

	Report	Aggregates>Time Series
	Route Name	
	Route Description	
	Report link	***http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&t***
	Report generated	02/05/2020 14:24
	PeMS version	caltrans_pems-19.0.0

Report Parameters

	Parameter	Value
	Quantity	Flow
	Data	288 Lane Points
	Data Quality	100% Observed
	Segment Type	VDS
	Segment Name	On Ramp VDS 1108606 - KETTNER BLVD
	start date	09/11/2019 00:00:00
	end date	09/11/2019 23:59:59
	Day of Week	Mo,Tu,We,Th,Fr
	Granularity	5min

5 Minutes	Flow (Veh/5 Min
9/11/2019 7:00	45
9/11/2019 7:05	47
9/11/2019 7:10	55
9/11/2019 7:15	42
9/11/2019 7:20	57
9/11/2019 7:25	44
9/11/2019 7:30	45
9/11/2019 7:35	45
9/11/2019 7:40	64
9/11/2019 7:45	38
9/11/2019 7:50	56
9/11/2019 7:55	53
9/11/2019 8:00	66
9/11/2019 8:05	77
9/11/2019 8:10	82
9/11/2019 8:15	62
9/11/2019 8:20	57
9/11/2019 8:25	46
9/11/2019 8:30	42
9/11/2019 8:35	56
9/11/2019 8:40	55
9/11/2019 8:45	20
9/11/2019 8:50	84
9/11/2019 8:55	57
9/11/2019 16:00	82
9/11/2019 16:05	79
9/11/2019 16:10	59
9/11/2019 16:15	96
9/11/2019 16:20	74
9/11/2019 16:25	76
9/11/2019 16:30	95
9/11/2019 16:35	97
9/11/2019 16:40	94
9/11/2019 16:45	86
9/11/2019 16:50	67
9/11/2019 16:55	76
9/11/2019 17:00	78
9/11/2019 17:05	80
9/11/2019 17:10	88
9/11/2019 17:15	85
9/11/2019 17:20	87
9/11/2019 17:25	74
9/11/2019 17:30	65
9/11/2019 17:35	77
9/11/2019 17:40	69
9/11/2019 17:45	52
9/11/2019 17:50	61
9/11/2019 17:55	74

PeMS Report Description

Report Description

	Report	Aggregates>Time Series
	Route Name	
	Route Description	
	Report link	***http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&t***
	Report generated	02/05/2020 14:36
	PeMS version	caltrans_pems-19.0.0

Report Parameters

	Parameter	Value
	Quantity	Flow
	Data	576 Lane Points
	Data Quality	100% Observed
	Segment Type	VDS
	Segment Name	On Ramp VDS 1108612 - INDIA ST
	start date	09/11/2019 00:00:00
	end date	09/11/2019 23:59:59
	Day of Week	Mo,Tu,We,Th,Fr,Sa
	Granularity	5min

APPENDIX C

INTERSECTION AND SEGMENT COUNT SHEETS

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#14R	File Name:	ITM-20-005-14R
Intersection:	I-8 West Ramp & Hotel Circle South	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	I-8 West Ramp			Hotel Circle South			*			Hotel Circle South			
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	25	0	142	0	14	30	0	0	0	21	19	0	251
7:15	16	0	141	0	13	25	0	0	0	26	27	0	248
7:30	29	0	152	0	23	31	0	0	0	31	38	0	304
7:45	32	0	164	0	24	34	0	0	0	33	43	0	330
8:00	30	0	151	0	16	29	0	0	0	49	34	0	309
8:15	25	0	148	0	16	27	0	0	0	23	32	0	271
8:30	24	0	136	0	23	25	0	0	0	45	45	0	298
8:45	20	0	136	0	21	17	0	0	0	43	35	0	272
Total	201	0	1170	0	150	218	0	0	0	271	273	0	2283
Approach%	14.7	-	85.3	-	40.8	59.2	-	-	-	49.8	50.2	-	
Total%	8.8	-	51.2	-	6.6	9.5	-	-	-	11.9	12.0	-	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	116	-	615	-	79	121	-	-	-	136	147	-	1,214
Approach%	15.9	-	84.1	-	39.5	60.5	-	-	-	48.1	51.9	-	
Total%	9.6	-	50.7	-	6.5	10.0	-	-	-	11.2	12.1	-	
PHF			0.93			0.86			#DIV/0!			0.85	0.92

PM	I-8 West Ramp			Hotel Circle South			*			Hotel Circle South			
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	40	0	93	0	9	23	0	0	0	42	90	0	297
16:15	54	0	92	0	18	14	0	0	0	40	80	0	298
16:30	56	0	119	0	17	31	0	0	0	47	113	0	383
16:45	63	0	92	0	15	19	0	0	0	54	81	0	324
17:00	49	0	120	0	17	32	0	0	0	75	140	0	433
17:15	56	0	126	0	12	15	0	0	0	67	99	0	375
17:30	69	0	139	0	20	14	0	0	0	48	105	0	395
17:45	56	0	123	0	14	19	0	0	0	57	94	0	363
Total	443	0	904	0	122	167	0	0	0	430	802	0	2868
Approach%	32.9	-	67.1	-	42.2	57.8	-	-	-	34.9	65.1	-	
Total%	15.4	-	31.5	-	4.3	5.8	-	-	-	15.0	28.0	-	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	230	-	508	-	63	80	-	-	-	247	438	-	1,566
Approach%	31.2	-	68.8	-	44.1	55.9	-	-	-	36.1	63.9	-	
Total%	14.7	-	32.4	-	4.0	5.1	-	-	-	15.8	28.0	-	
PHF			0.89			0.73			#DIV/0!			0.80	0.90

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

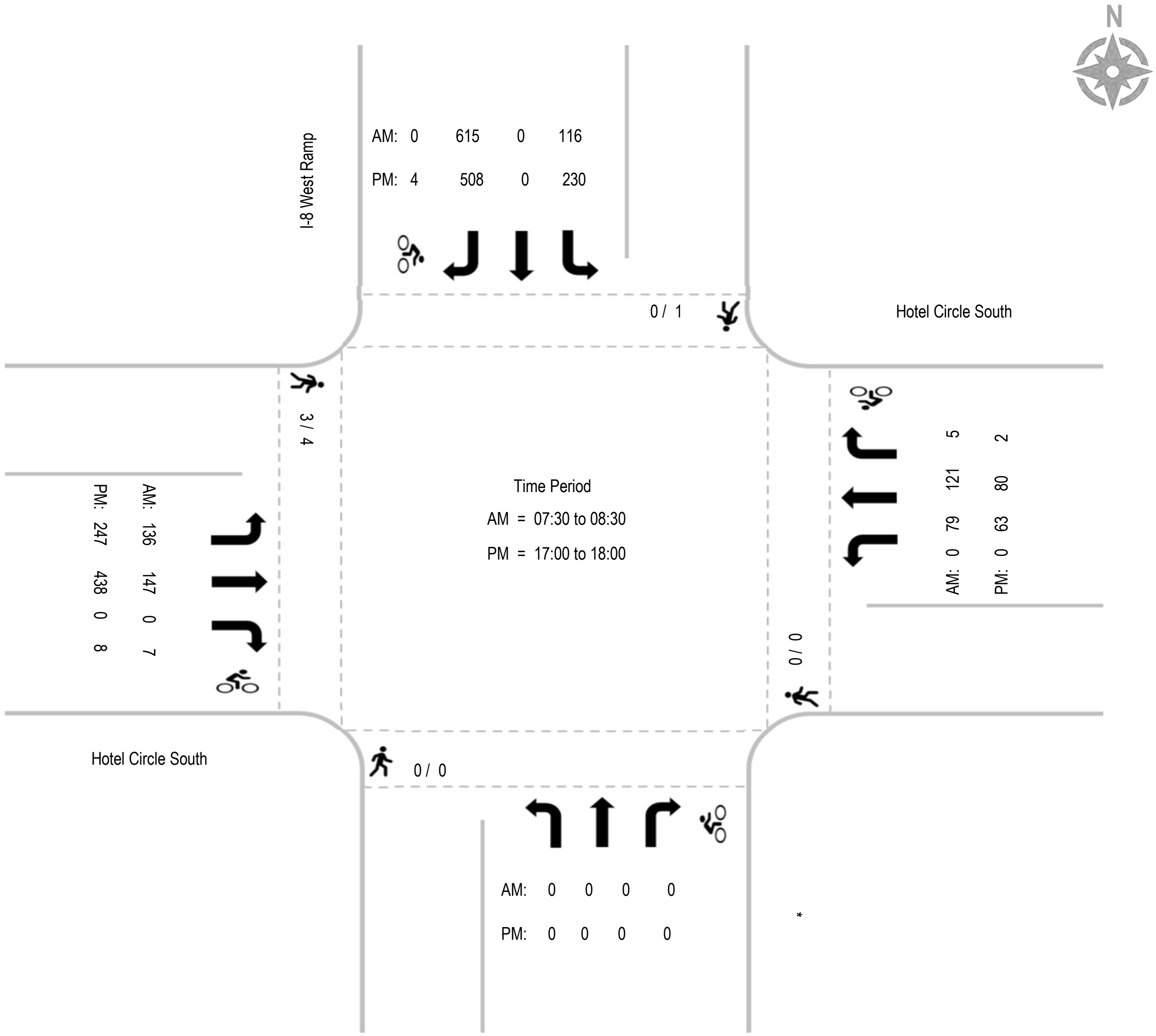
Location:	#14R	File Name:	ITM-20-005-14R
Intersection:	I-8 West Ramp & Hotel Circle South	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	I-8 West Ramp Southbound				Hotel Circle South Westbound				* Northbound				Hotel Circle South Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	1	2
7:15	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:30	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	1	3
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
8:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
8:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2
Ped Total	0				0				0				3				3	
Bike Total		0	0	0		0	4	1		0	0	0		4	3	0		12

PM	I-8 West Ramp Southbound				Hotel Circle South Westbound				* Northbound				Hotel Circle South Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2	0	1	4
16:30	1	0	0	0	0	0	0	1	0	0	0	0	2	2	0	0	3	3
16:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
17:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Ped Total	1				0				0				4				5	
Bike Total		0	0	4		0	0	2		0	0	0		4	4	0		14

Intersection Turning Movement - Peak Hour Summary

Location:	#14R	File Name:	ITM-20-005-14R
Intersection:	I-8 West Ramp & Hotel Circle South	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#12/13	File Name: ITM-20-005-12/13
Intersection:	Taylor Street & I-8 East Ramp	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	I-8 EB On/Off Ramp Southbound			Taylor Street Westbound			* Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	24	0	23	0	147	12	0	0	0	23	17	0	246
7:15	37	0	25	0	137	16	0	0	0	39	14	0	268
7:30	44	0	28	0	159	17	0	0	0	53	24	0	325
7:45	51	0	48	0	175	15	0	0	0	38	27	0	354
8:00	57	0	35	0	146	8	0	0	0	52	25	0	323
8:15	41	0	35	0	158	11	0	0	0	53	19	0	317
8:30	59	0	31	0	145	14	0	0	0	50	28	0	327
8:45	57	0	39	0	153	9	0	0	0	36	17	0	311
Total	370	0	264	0	1220	102	0	0	0	344	171	0	2471
Approach%	58.4	-	41.6	-	92.3	7.7	-	-	-	66.8	33.2	-	
Total%	15.0	-	10.7	-	49.4	4.1	-	-	-	13.9	6.9	-	

AM Intersection Peak Hour: **07:45 to 08:45**

Volume	208	-	149	-	624	48	-	-	-	193	99	-	1,321
Approach%	58.3	-	41.7	-	92.9	7.1	-	-	-	66.1	33.9	-	
Total%	15.7	-	11.3	-	47.2	3.6	-	-	-	14.6	7.5	-	
PHF			0.90			0.88			#DIV/0!			0.94	0.94

PM	I-8 EB On/Off Ramp Southbound			Taylor Street Westbound			* Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	57	0	9	0	64	35	0	0	0	165	74	0	404
16:15	35	0	7	0	80	39	0	0	0	184	83	0	428
16:30	53	0	4	0	86	49	0	0	0	174	114	0	480
16:45	46	0	9	0	79	26	0	0	0	177	88	0	425
17:00	64	0	8	0	91	54	0	0	0	165	152	0	534
17:15	55	0	10	0	93	41	0	0	0	168	113	0	480
17:30	51	0	1	0	113	50	0	0	0	166	96	0	477
17:45	45	0	12	0	99	49	0	0	0	173	106	0	484
Total	406	0	60	0	705	343	0	0	0	1372	826	0	3712
Approach%	87.1	-	12.9	-	67.3	32.7	-	-	-	62.4	37.6	-	
Total%	10.9	-	1.6	-	19.0	9.2	-	-	-	37.0	22.3	-	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	215	-	31	-	396	194	-	-	-	672	467	-	1,975
Approach%	87.4	-	12.6	-	67.1	32.9	-	-	-	59.0	41.0	-	
Total%	10.9	-	1.6	-	20.1	9.8	-	-	-	34.0	23.6	-	
PHF			0.85			0.90			#DIV/0!			0.90	0.93

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers	Location:	#12/13	File Name:	ITM-20-005-12/13
	Intersection:	Taylor Street & I-8 East Ramp	Project:	LLG Ref. 3-19-3171
	Date of Count:	Thursday, January 23, 2020		Old Town Campus

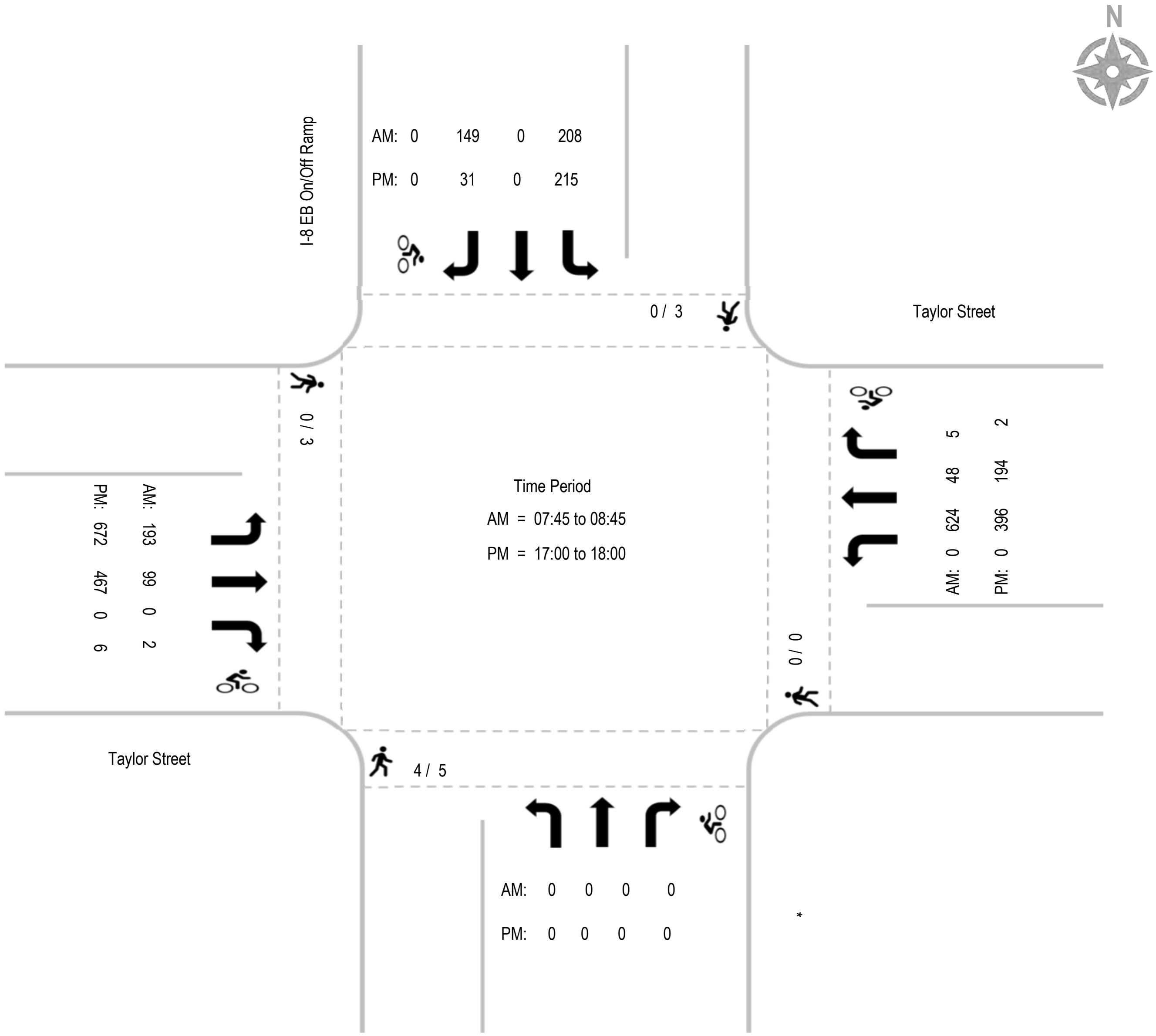
AM	I-8 EB On/Off Ramp Southbound				Taylor Street Westbound				* Northbound				Taylor Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1
8:30	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	2	1
8:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Ped Total	0				0				4				0				4	
Bike Total		0	0	0		0	5	0		0	0	0		0	2	0		7

PM	I-8 EB On/Off Ramp Southbound				Taylor Street Westbound				* Northbound				Taylor Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
16:30	2	0	0	0	0	0	0	0	2	0	0	0	2	0	1	0	6	1
16:45	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	2	2
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
17:30	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	2	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	3				0				5				3				11	
Bike Total		0	0	0		0	2	0		0	0	0		0	6	0		8

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#12/13	File Name:	ITM-20-005-12/13
Intersection:	Taylor Street & I-8 East Ramp	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 | info@yourcountdata.com

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#11	File Name:	ITM-20-005-11
Intersection:	Morena Boulevard & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Morena Boulevard			Taylor Street			Park Driveway			Taylor Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	7	0	38	0	131	33	0	0	0	37	27	0	273
7:15	15	0	43	0	139	45	0	0	0	61	31	1	335
7:30	17	1	42	0	149	51	0	0	1	80	46	0	387
7:45	20	1	52	3	157	5	0	0	3	67	37	2	347
8:00	32	0	49	1	121	42	0	0	0	65	50	0	360
8:15	17	0	44	0	143	41	0	0	2	70	53	0	370
8:30	15	1	48	0	149	35	0	0	2	53	41	3	347
8:45	15	0	51	2	114	36	0	0	4	58	32	1	313
Total	138	3	367	6	1103	288	0	0	12	491	317	7	2732
Approach%	27.2	0.6	72.2	0.4	79.0	20.6	-	-	100.0	60.2	38.9	0.9	
Total%	5.1	0.1	13.4	0.2	40.4	10.5	-	-	0.4	18.0	11.6	0.3	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	86	2	187	4	570	139	-	-	6	282	186	2	1,464
Approach%	31.3	0.7	68.0	0.6	79.9	19.5	-	-	100.0	60.0	39.6	0.4	
Total%	5.9	0.1	12.8	0.3	38.9	9.5	-	-	0.4	19.3	12.7	0.1	
PHF			0.85			0.89			0.50			0.93	0.95

PM	Morena Boulevard			Taylor Street			Park Driveway			Taylor Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	57	1	43	0	39	22	0	0	9	124	173	4	472
16:15	59	7	60	3	55	21	0	0	3	77	153	2	440
16:30	83	0	69	0	57	20	0	0	1	139	216	0	585
16:45	48	6	76	1	64	12	0	0	2	126	167	1	503
17:00	63	4	81	1	65	12	0	0	5	111	204	0	546
17:15	76	9	107	3	64	18	0	2	3	121	219	2	624
17:30	66	2	92	1	75	18	0	0	1	107	191	0	553
17:45	54	6	87	3	67	22	0	0	1	92	175	1	508
Total	506	35	615	12	486	145	0	2	25	897	1498	10	4231
Approach%	43.8	3.0	53.2	1.9	75.6	22.6	-	7.4	92.6	37.3	62.3	0.4	
Total%	12.0	0.8	14.5	0.3	11.5	3.4	-	0.0	0.6	21.2	35.4	0.2	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	270	19	333	5	250	62	-	2	11	497	806	3	2,258
Approach%	43.4	3.1	53.5	1.6	78.9	19.6	-	15.4	84.6	38.1	61.7	0.2	
Total%	12.0	0.8	14.7	0.2	11.1	2.7	-	0.1	0.5	22.0	35.7	0.1	
PHF			0.81			0.93			0.65			0.92	0.90

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#11	File Name:	ITM-20-005-11
Intersection:	Morena Boulevard & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

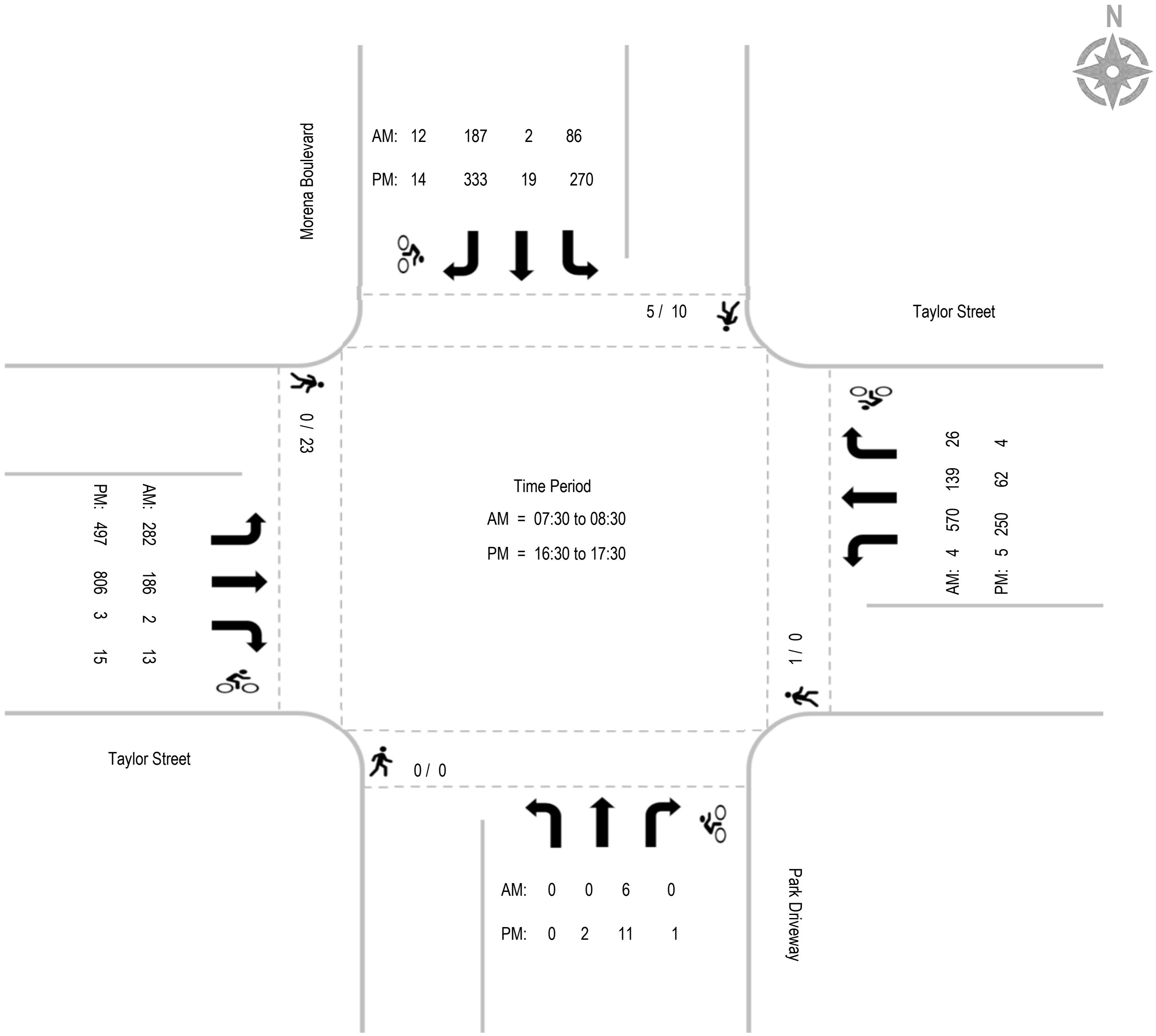
AM	Morena Boulevard **Southbound**				Taylor Street **Westbound**				Park Driveway **Northbound**				Taylor Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	1	2	0	0	10	1	0	0	0	0	0	1	2	0	1	17
7:15	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	5
7:30	0	0	0	3	0	0	0	1	0	0	0	0	0	1	0	0	0	5
7:45	2	1	1	1	0	0	1	1	0	0	0	0	0	2	0	0	2	7
8:00	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
8:15	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	3
8:30	0	0	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	5
8:45	0	0	0	1	0	0	1	1	0	0	0	0	0	2	2	0	0	7
Ped Total	5				1				0				0				6	
Bike Total		2	2	8		0	19	7		0	0	0		8	5	0		51

PM	Morena Boulevard **Southbound**				Taylor Street **Westbound**				Park Driveway **Northbound**				Taylor Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	1	0	0	0	0	0	0	0	0	1	2	2	0	1	5
16:15	2	0	1	0	0	0	1	0	0	0	0	0	3	1	0	0	5	3
16:30	1	0	0	1	0	0	0	0	0	0	0	0	4	2	0	0	5	3
16:45	1	0	2	3	0	0	0	1	0	0	0	0	1	0	1	0	2	7
17:00	3	0	1	2	0	0	0	0	0	0	0	0	6	2	0	0	9	5
17:15	3	0	0	1	0	0	0	0	0	0	0	1	4	0	2	0	7	4
17:30	0	1	1	0	0	0	1	1	0	0	0	0	2	0	1	0	2	5
17:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	2
Ped Total	10				0				0				23				33	
Bike Total		1	5	8		0	2	2		0	0	1		7	8	0		34

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#11	File Name:	ITM-20-005-11
Intersection:	Morena Boulevard & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#10	File Name:	ITM-20-005-10
Intersection:	Juan Street & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Caltrans Driveway Southbound			Taylor Street Westbound			Juan Street Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	2	0	0	11	121	3	12	0	18	5	49	7	228
7:15	0	0	0	11	138	2	7	0	41	3	62	2	266
7:30	0	1	1	13	146	5	14	1	42	3	89	3	318
7:45	0	2	2	25	135	6	10	2	40	11	82	6	321
8:00	1	0	0	27	123	0	18	1	37	7	66	3	283
8:15	2	1	1	25	144	4	13	0	25	1	87	11	314
8:30	0	2	2	25	143	2	8	0	28	5	84	2	301
8:45	0	0	0	25	124	1	7	0	19	1	75	8	260
Total	5	6	6	162	1074	23	89	4	250	36	594	42	2291
Approach%	29.4	35.3	35.3	12.9	85.3	1.8	25.9	1.2	72.9	5.4	88.4	6.3	
Total%	0.2	0.3	0.3	7.1	46.9	1.0	3.9	0.2	10.9	1.6	25.9	1.8	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	3	4	4	90	548	15	55	4	144	22	324	23	1,236
Approach%	27.3	36.4	36.4	13.8	83.9	2.3	27.1	2.0	70.9	6.0	87.8	6.2	
Total%	0.2	0.3	0.3	7.3	44.3	1.2	4.4	0.3	11.7	1.8	26.2	1.9	
PHF			0.69			0.94			0.89			0.93	0.96

PM	Caltrans Driveway Southbound			Taylor Street Westbound			Juan Street Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	2	0	0	40	73	2	14	0	65	0	240	18	454
16:15	6	4	1	38	74	4	19	2	42	0	167	17	374
16:30	5	2	0	47	85	2	16	0	54	1	273	21	506
16:45	1	0	0	51	95	2	22	0	58	2	267	18	516
17:00	1	1	2	49	124	1	11	0	48	2	253	23	515
17:15	1	1	0	38	140	4	16	1	54	0	265	20	540
17:30	2	1	0	50	119	3	18	0	43	0	233	15	484
17:45	0	0	1	36	97	6	9	0	41	2	218	27	437
Total	18	9	4	349	807	24	125	3	405	7	1916	159	3826
Approach%	58.1	29.0	12.9	29.6	68.4	2.0	23.5	0.6	76.0	0.3	92.0	7.6	
Total%	0.5	0.2	0.1	9.1	21.1	0.6	3.3	0.1	10.6	0.2	50.1	4.2	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	8	4	2	185	444	9	65	1	214	5	1,058	82	2,077
Approach%	57.1	28.6	14.3	29.0	69.6	1.4	23.2	0.4	76.4	0.4	92.4	7.2	
Total%	0.4	0.2	0.1	8.9	21.4	0.4	3.1	0.0	10.3	0.2	50.9	3.9	
PHF			0.50			0.88			0.88			0.97	0.96

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#10	File Name:	ITM-20-005-10
Intersection:	Juan Street & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

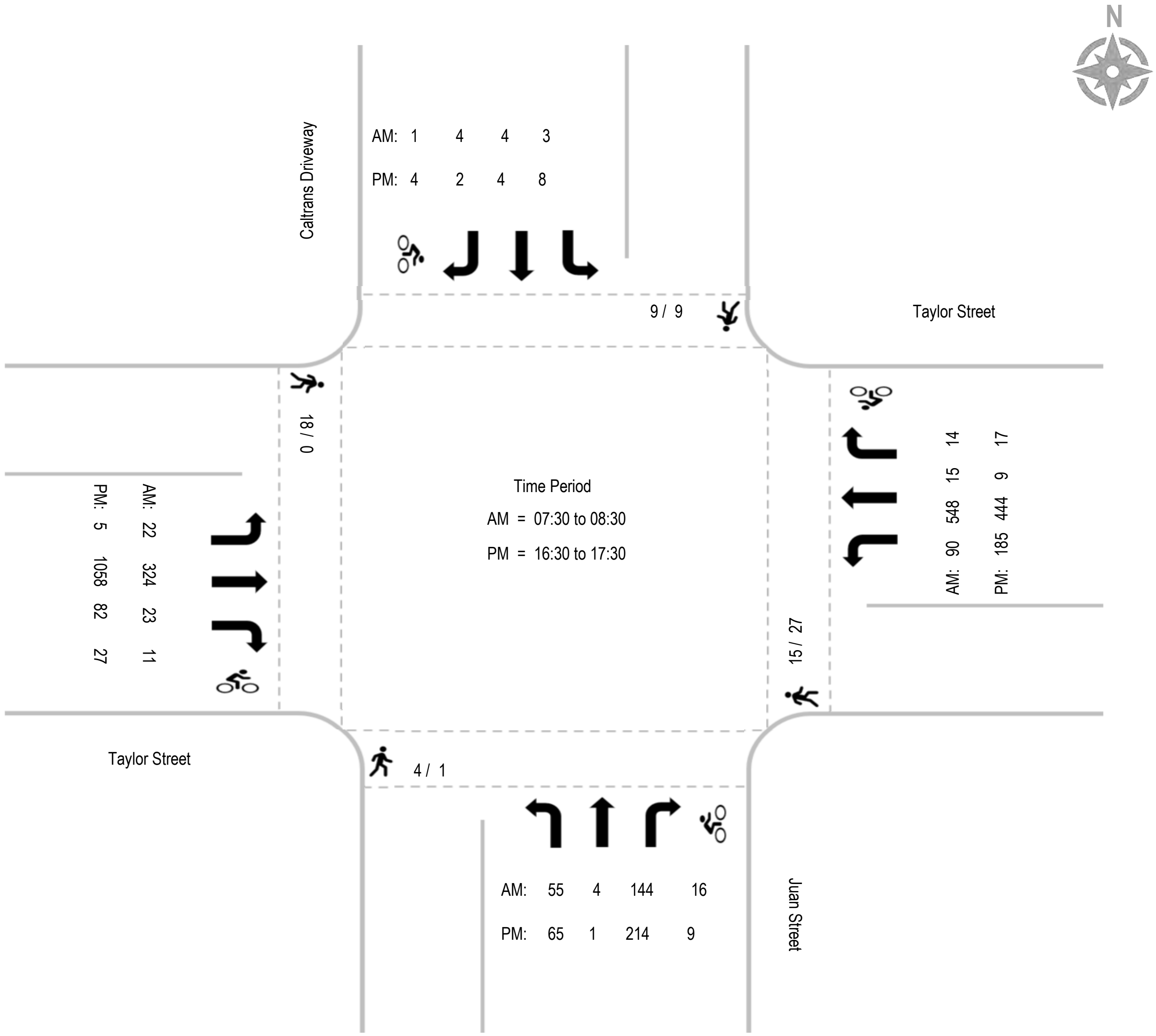
AM	Caltrans Driveway **Southbound**				Taylor Street **Westbound**				Juan Street **Northbound**				Taylor Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	2	0	1	0	1	0	3	0	1	2	0	0	1	0	2	0	5	8
7:15	2	0	0	0	0	0	2	0	0	2	0	0	1	0	0	0	3	4
7:30	1	0	0	0	2	0	3	0	1	2	0	1	3	0	1	0	7	7
7:45	0	0	0	0	4	1	2	0	0	1	0	0	2	0	1	0	6	5
8:00	1	0	0	0	5	0	0	0	1	3	0	0	0	0	1	0	7	4
8:15	0	0	0	0	0	0	1	0	0	2	0	1	7	0	2	0	7	6
8:30	2	0	0	0	1	0	1	0	0	0	0	0	2	0	4	0	5	5
8:45	1	0	0	0	2	0	1	0	1	1	0	1	2	0	0	0	6	3
Ped Total	9				15				4				18				46	
Bike Total		0	1	0		1	13	0		13	0	3		0	11	0		42

PM	Caltrans Driveway **Southbound**				Taylor Street **Westbound**				Juan Street **Northbound**				Taylor Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	0	0	0	0	0	0	1	1	0	5	0	0	2	0	2	8
16:15	1	0	0	0	2	0	1	0	0	0	0	0	0	1	0	0	3	2
16:30	0	0	0	0	2	0	1	0	0	0	0	1	0	2	1	2	2	7
16:45	2	2	0	0	8	1	4	1	0	0	0	0	0	3	0	0	10	11
17:00	2	0	0	0	1	1	2	0	0	1	0	0	0	1	3	0	3	8
17:15	2	0	0	0	6	0	2	0	0	0	0	1	0	0	4	1	8	8
17:30	1	2	0	0	3	0	2	0	0	0	0	0	0	1	2	0	4	7
17:45	0	0	0	0	5	1	1	0	0	0	0	0	0	0	4	0	5	6
Ped Total	9				27				1				0				37	
Bike Total		4	0	0		3	13	1		2	0	7		8	16	3		57

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#10	File Name:	ITM-20-005-10
Intersection:	Juan Street & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#09	File Name: ITM-20-005-09
Intersection:	Congress Street & Taylor Street	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	- Southbound			Taylor Street Westbound			Congress Street Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	6	130	0	9	0	10	0	51	11	217
7:15	0	0	0	10	130	0	8	0	14	0	53	18	233
7:30	0	0	0	29	130	0	10	0	25	0	71	16	281
7:45	0	0	0	16	127	0	19	0	14	0	87	22	285
8:00	0	0	0	28	127	0	14	0	23	0	56	18	266
8:15	0	0	0	23	126	0	14	0	18	0	79	12	272
8:30	0	0	0	29	119	0	16	0	6	0	75	13	258
8:45	0	0	0	41	100	0	9	0	12	0	75	28	265
Total	0	0	0	182	989	0	99	0	122	0	547	138	2077
Approach%	-	-	-	15.5	84.5	-	44.8	-	55.2	-	79.9	20.1	
Total%	-	-	-	8.8	47.6	-	4.8	-	5.9	-	26.3	6.6	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	-	-	96	510	-	57	-	80	-	293	68	1,104
Approach%	-	-	-	15.8	84.2	-	41.6	-	58.4	-	81.2	18.8	
Total%	-	-	-	8.7	46.2	-	5.2	-	7.2	-	26.5	6.2	
PHF			#DIV/0!			0.95			0.93			0.83	0.97

PM	- Southbound			Taylor Street Westbound			Congress Street Northbound			Taylor Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	18	61	0	16	0	45	0	205	14	359
16:15	0	0	0	17	64	0	11	0	27	0	145	20	284
16:30	0	0	0	40	102	0	37	0	51	0	235	16	481
16:45	0	0	0	24	83	0	23	0	43	0	245	33	451
17:00	0	0	0	39	131	0	28	0	47	0	228	20	493
17:15	0	0	0	27	118	0	25	0	66	0	233	31	500
17:30	0	0	0	33	117	0	13	0	58	0	187	18	426
17:45	0	0	0	24	94	0	30	0	42	0	195	34	419
Total	0	0	0	222	770	0	183	0	379	0	1673	186	3413
Approach%	-	-	-	22.4	77.6	-	32.6	-	67.4	-	90.0	10.0	
Total%	-	-	-	6.5	22.6	-	5.4	-	11.1	-	49.0	5.4	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	-	-	-	130	434	-	113	-	207	-	941	100	1,925
Approach%	-	-	-	23.0	77.0	-	35.3	-	64.7	-	90.4	9.6	
Total%	-	-	-	6.8	22.5	-	5.9	-	10.8	-	48.9	5.2	
PHF			#DIV/0!			0.83			0.88			0.94	0.96

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#09	File Name:	ITM-20-005-09
Intersection:	Congress Street & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

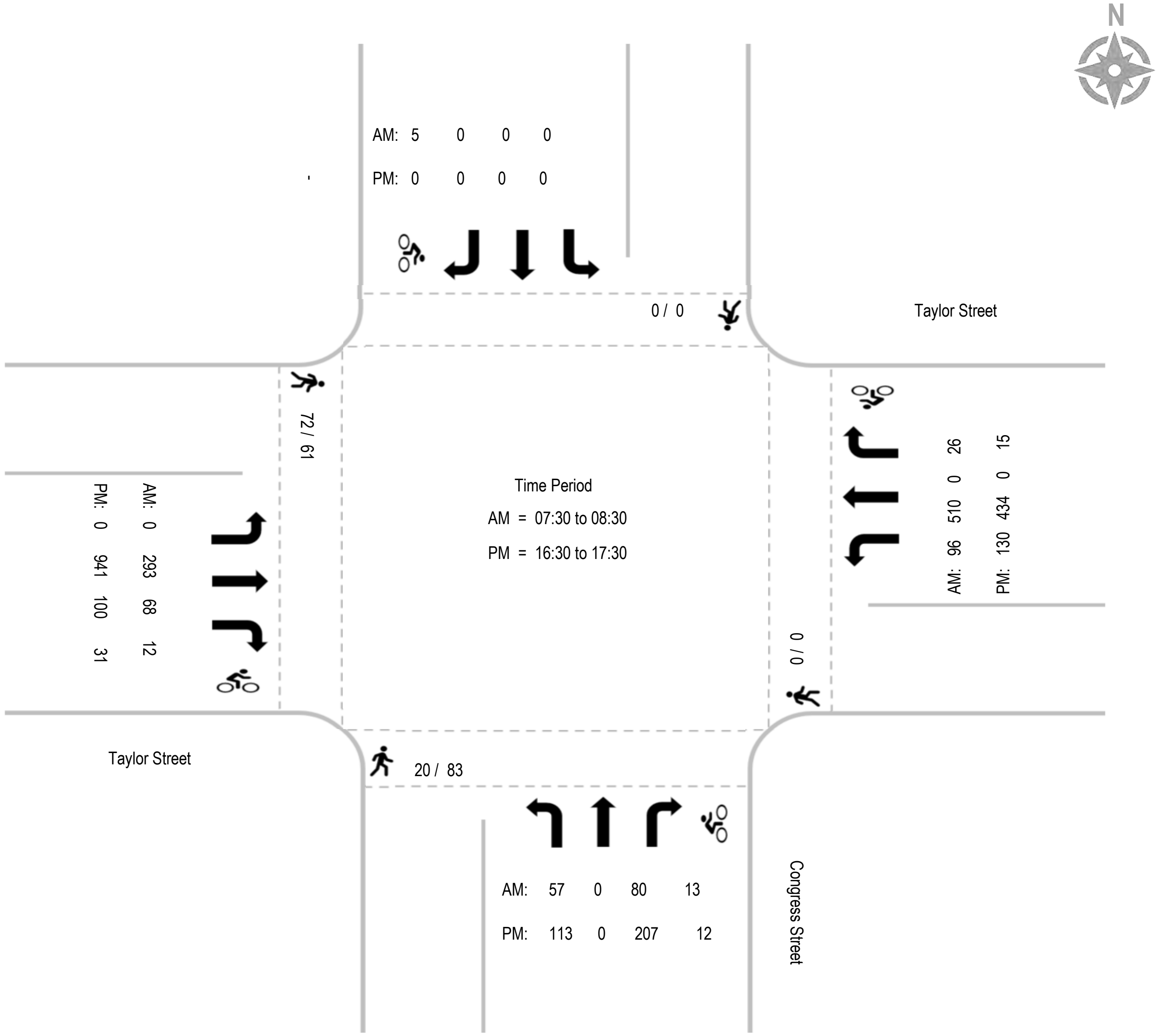
AM	-				Taylor Street				Congress Street				Taylor Street				Totals	
	Southbound				**Westbound**				**Northbound**				**Eastbound**					
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	1	1	0	0	0	4	0	3	2	0	1	13	0	1	0	16	10
7:15	0	0	0	0	0	0	5	0	2	0	0	0	11	0	0	0	13	5
7:30	0	0	2	0	0	1	4	0	3	0	1	0	18	0	1	4	21	13
7:45	0	0	0	0	0	0	2	0	2	0	2	0	3	0	0	0	5	4
8:00	0	0	0	0	0	0	3	0	2	2	0	0	6	0	1	0	8	6
8:15	0	0	0	0	0	1	3	0	2	1	0	0	9	0	1	0	11	6
8:30	0	0	0	0	0	0	1	0	1	3	0	1	8	0	1	0	9	6
8:45	0	1	0	0	0	0	2	0	5	0	0	0	4	0	2	1	9	6
Ped Total	0				0				20				72				92	
Bike Total		2	3	0		2	24	0		8	3	2		0	7	5		56

PM	-				Taylor Street				Congress Street				Taylor Street				Totals	
	Southbound				**Westbound**				**Northbound**				**Eastbound**					
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	1	2	0	7	1	0	0	17	0	3	0	24	7
16:15	0	0	0	0	0	0	1	0	11	2	0	0	8	0	2	0	19	5
16:30	0	0	0	0	0	1	0	0	10	2	0	1	6	0	4	0	16	8
16:45	0	0	0	0	0	0	2	0	5	1	0	1	8	0	3	1	13	8
17:00	0	0	0	0	0	2	1	0	15	3	0	0	8	0	3	0	23	9
17:15	0	0	0	0	0	0	3	0	11	0	0	0	7	0	5	0	18	8
17:30	0	0	0	0	0	1	0	0	7	0	0	0	3	0	2	2	10	5
17:45	0	0	0	0	0	0	1	0	17	0	1	0	4	0	4	2	21	8
Ped Total	0				0				83				61				144	
Bike Total		0	0	0		5	10	0		9	1	2		0	26	5		58

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#09	File Name:	ITM-20-005-09
Intersection:	Congress Street & Taylor Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#08	File Name:	ITM-20-005-08
Intersection:	Pacific Highway & Taylor Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Pacific Highway Southbound			Taylor Street Westbound			Pacific Highway Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	11	22	8	75	39	14	27	31	25	5	33	17	307
7:15	13	28	11	91	43	17	20	39	26	13	42	30	373
7:30	10	39	15	89	38	22	27	96	41	11	41	36	465
7:45	10	32	15	51	46	23	30	100	51	23	60	20	461
8:00	10	23	11	64	68	27	21	75	29	9	46	14	397
8:15	11	21	13	70	49	21	35	73	38	9	51	13	404
8:30	20	15	10	67	67	24	32	41	42	16	39	21	394
8:45	16	24	10	45	47	19	35	55	36	16	55	17	375
Total	101	204	93	552	397	167	227	510	288	102	367	168	3176
Approach%	25.4	51.3	23.4	49.5	35.6	15.0	22.1	49.8	28.1	16.0	57.6	26.4	
Total%	3.2	6.4	2.9	17.4	12.5	5.3	7.1	16.1	9.1	3.2	11.6	5.3	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	41	115	54	274	201	93	113	344	159	52	198	83	1,727
Approach%	19.5	54.8	25.7	48.2	35.4	16.4	18.3	55.8	25.8	15.6	59.5	24.9	
Total%	2.4	6.7	3.1	15.9	11.6	5.4	6.5	19.9	9.2	3.0	11.5	4.8	
PHF			0.82			0.89			0.85			0.81	0.93

PM	Pacific Highway Southbound			Taylor Street Westbound			Pacific Highway Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	29	38	23	25	50	5	44	61	124	16	91	34	540
16:15	20	46	27	20	27	6	66	40	72	27	64	35	450
16:30	34	60	25	69	72	17	52	64	119	21	126	31	690
16:45	30	49	21	45	62	10	36	45	128	10	111	35	582
17:00	19	52	30	82	59	15	49	62	127	26	113	23	657
17:15	41	60	35	61	73	8	51	55	128	10	118	28	668
17:30	26	61	30	56	82	1	33	28	109	7	89	31	553
17:45	21	44	17	57	64	11	40	35	98	16	125	29	557
Total	220	410	208	415	489	73	371	390	905	133	837	246	4697
Approach%	26.3	48.9	24.8	42.5	50.1	7.5	22.3	23.4	54.3	10.9	68.8	20.2	
Total%	4.7	8.7	4.4	8.8	10.4	1.6	7.9	8.3	19.3	2.8	17.8	5.2	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	124	221	111	257	266	50	188	226	502	67	468	117	2,597
Approach%	27.2	48.5	24.3	44.9	46.4	8.7	20.5	24.7	54.8	10.3	71.8	17.9	
Total%	4.8	8.5	4.3	9.9	10.2	1.9	7.2	8.7	19.3	2.6	18.0	4.5	
PHF			0.84			0.91			0.96			0.92	0.94

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#08	File Name:	ITM-20-005-08
Intersection:	Pacific Highway & Taylor Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

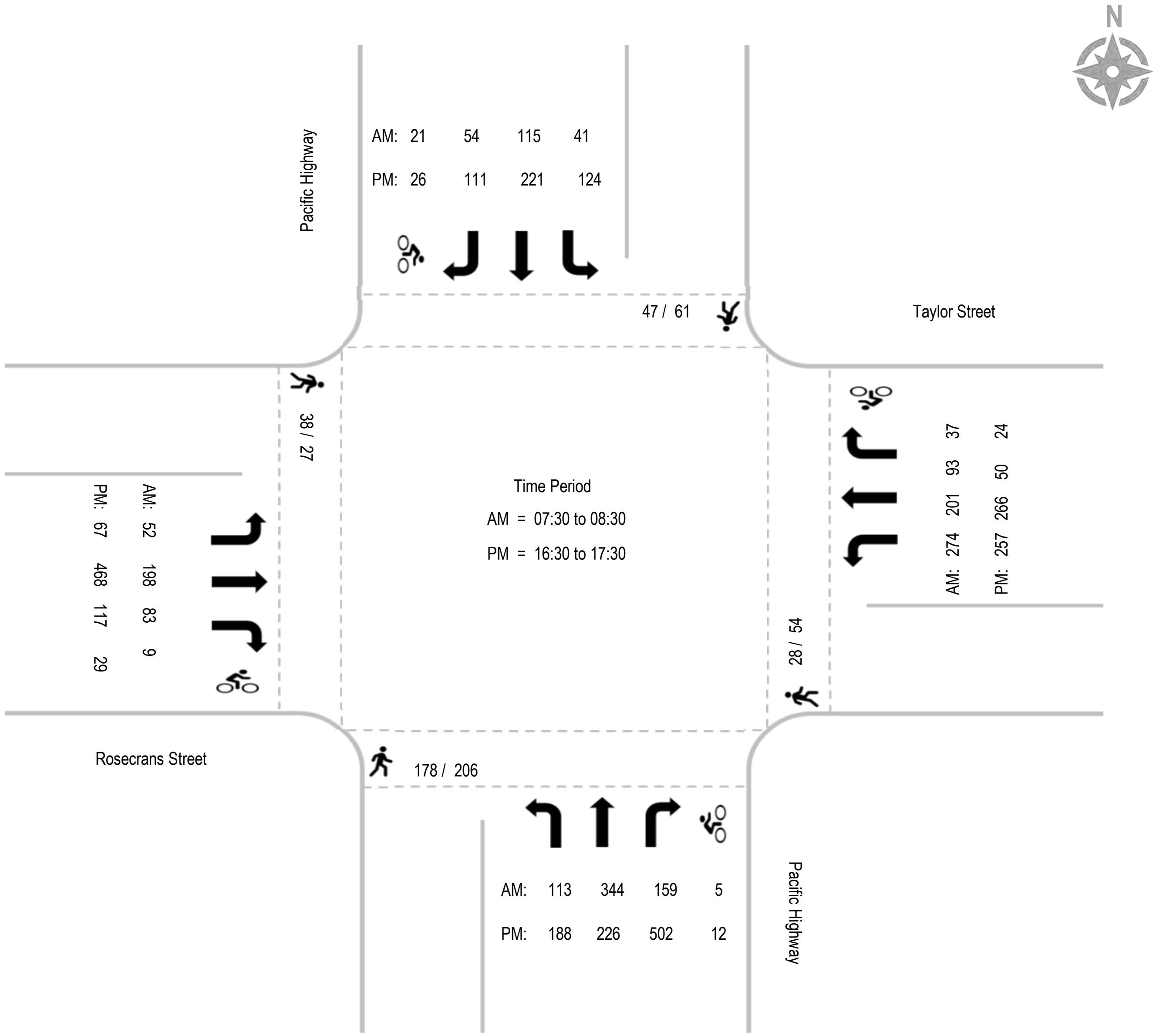
AM	Pacific Highway Southbound				Taylor Street Westbound				Pacific Highway Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	14	3	0	0	3	1	5	3	25	0	0	0	13	0	0	0	55	12
7:15	5	1	0	0	0	2	1	2	21	0	1	0	4	0	0	0	30	7
7:30	4	4	1	0	6	1	1	3	17	0	1	0	6	0	1	0	33	12
7:45	6	2	1	0	5	0	4	1	10	0	1	0	0	0	2	0	21	11
8:00	7	0	1	0	4	0	1	3	30	0	1	0	2	0	1	0	43	7
8:15	1	2	0	0	3	0	0	4	26	0	0	0	6	0	0	1	36	7
8:30	5	2	1	2	6	0	1	2	33	0	0	0	3	1	1	0	47	10
8:45	5	0	0	1	1	0	1	1	16	0	1	0	4	0	2	0	26	6
Ped Total	47				28				178				38				291	
Bike Total		14	4	3		4	14	19		0	5	0		1	7	1		72

PM	Pacific Highway Southbound				Taylor Street Westbound				Pacific Highway Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	14	3	1	0	0	0	2	3	39	0	2	0	1	0	1	3	54	15
16:15	6	0	0	3	6	0	1	1	11	0	1	0	2	2	0	0	25	8
16:30	2	2	1	1	7	1	1	0	33	0	2	0	6	2	5	0	48	15
16:45	4	3	0	0	5	0	1	2	29	0	1	0	2	0	4	1	40	12
17:00	8	1	0	0	0	0	0	5	21	0	2	0	8	0	1	1	37	10
17:15	19	2	0	0	22	0	2	1	36	0	2	1	2	0	0	3	79	11
17:30	6	6	0	1	8	0	1	0	23	0	0	0	5	0	2	2	42	12
17:45	2	1	1	0	6	0	3	0	14	0	1	0	1	1	1	0	23	8
Ped Total	61				54				206				27				348	
Bike Total		18	3	5		1	11	12		0	11	1		5	14	10		91

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#08	File Name:	ITM-20-005-08
Intersection:	Pacific Highway & Taylor Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



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Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#07R	File Name:	ITM-20-005-07R
Intersection:	Jefferson Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Jefferson Street			Rosecrans Street			*			Rosecrans Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	2	0	2	0	49	15	0	0	0	3	47	0	118
7:15	4	0	2	0	59	15	0	0	0	1	84	0	165
7:30	6	0	2	0	66	10	0	0	0	6	96	0	186
7:45	2	0	4	0	74	10	0	0	0	1	92	0	183
8:00	4	0	2	0	95	13	0	0	0	7	53	0	174
8:15	4	0	2	0	87	10	0	0	0	5	79	0	187
8:30	3	0	1	0	86	10	0	0	0	3	70	0	173
8:45	5	0	2	0	76	5	0	0	0	0	89	0	177
Total	30	0	17	0	592	88	0	0	0	26	610	0	1363
Approach%	63.8	-	36.2	-	87.1	12.9	-	-	-	4.1	95.9	-	
Total%	2.2	-	1.2	-	43.4	6.5	-	-	-	1.9	44.8	-	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	16	-	10	-	322	43	-	-	-	19	320	-	730
Approach%	61.5	-	38.5	-	88.2	11.8	-	-	-	5.6	94.4	-	
Total%	2.2	-	1.4	-	44.1	5.9	-	-	-	2.6	43.8	-	
PHF			0.81			0.84			#DIV/0!			0.83	0.98

PM	Jefferson Street			Rosecrans Street			*			Rosecrans Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	12	0	6	0	90	28	0	0	0	16	142	0	294
16:15	11	0	5	0	84	31	0	0	0	19	119	0	269
16:30	5	0	6	0	95	43	0	0	0	13	156	0	318
16:45	8	0	4	0	112	26	0	0	0	10	163	0	323
17:00	6	0	4	0	94	22	0	0	0	14	150	0	290
17:15	1	0	4	0	105	27	0	0	0	7	128	0	272
17:30	1	0	7	0	135	14	0	0	0	2	138	0	297
17:45	2	0	5	0	96	10	0	0	0	6	119	0	238
Total	46	0	41	0	811	201	0	0	0	87	1115	0	2301
Approach%	52.9	-	47.1	-	80.1	19.9	-	-	-	7.2	92.8	-	
Total%	2.0	-	1.8	-	35.2	8.7	-	-	-	3.8	48.5	-	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	36	-	21	-	381	128	-	-	-	58	580	-	1,204
Approach%	63.2	-	36.8	-	74.9	25.1	-	-	-	9.1	90.9	-	
Total%	3.0	-	1.7	-	31.6	10.6	-	-	-	4.8	48.2	-	
PHF			0.79			0.92			#DIV/0!			0.92	0.93

Intersection Turning Movement - Bicycle & Pedestrian Count

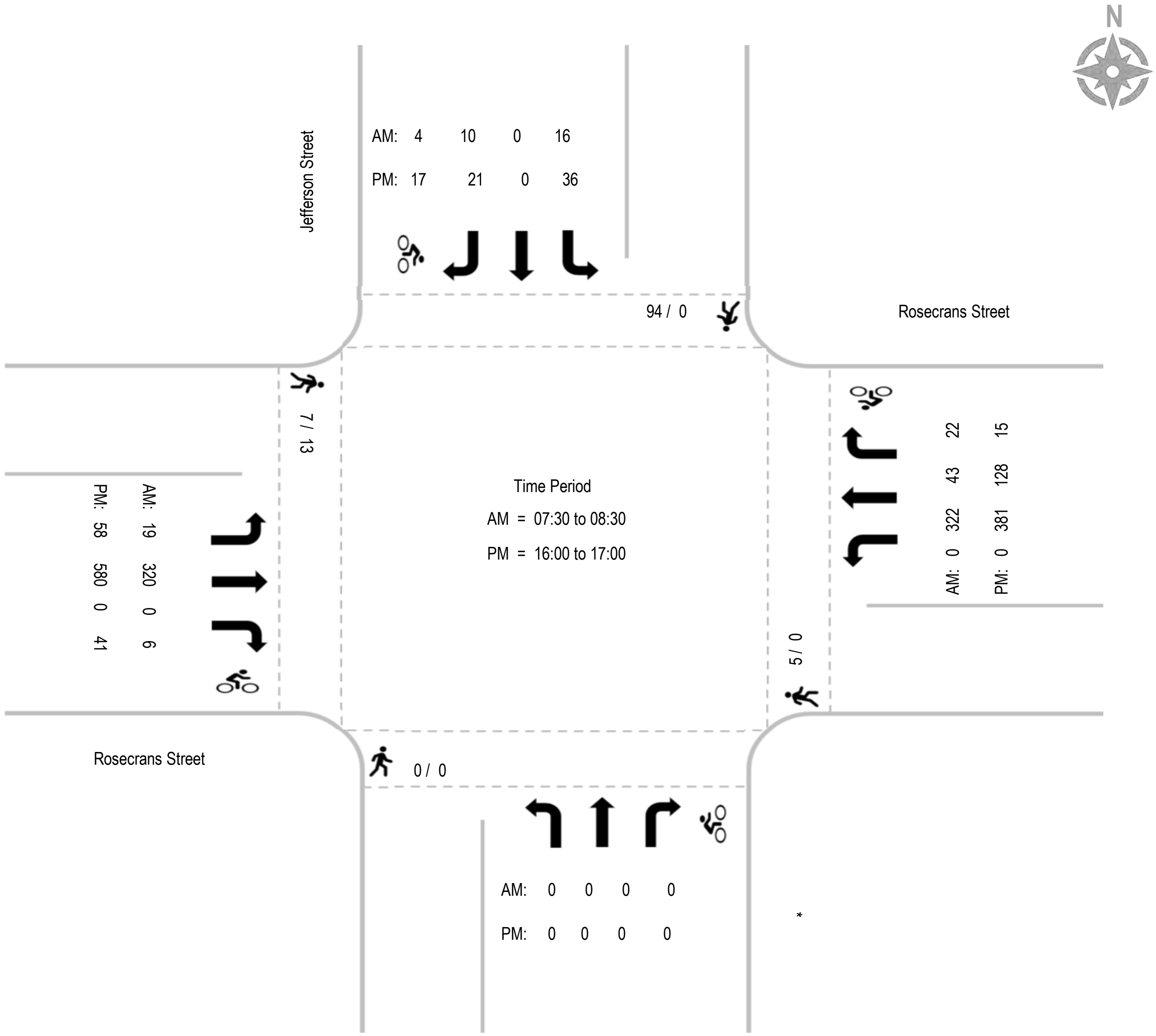
LINSCOTT LAW & GREENSPAN engineers		
Location:	#07R	File Name: ITM-20-005-07R
Intersection:	Jefferson Street & Rosecrans Street	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	Jefferson Street Southbound				Rosecrans Street Westbound				* Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	22	2	0	0	0	0	9	0	0	0	0	0	0	0	0	0	22	11
7:15	16	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	17	0
7:30	12	1	0	0	2	0	1	0	0	0	0	0	0	0	2	0	14	4
7:45	6	0	0	0	0	0	5	0	0	0	0	0	2	0	0	1	8	6
8:00	12	0	0	0	1	0	1	0	0	0	0	0	3	0	2	0	16	3
8:15	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	1
8:30	10	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	11	4
8:45	11	1	0	0	1	0	1	0	0	0	0	0	1	0	1	0	13	3
Ped Total	94				5				0				7				106	
Bike Total		4	0	0		0	22	0		0	0	0		0	5	1		32

PM	Jefferson Street Southbound				Rosecrans Street Westbound				* Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	4	0	0	0	0	0	1	0	1	3	1	8
16:15	0	1	0	0	0	0	5	0	0	0	0	0	2	0	3	1	2	10
16:30	0	0	7	1	0	0	0	1	0	0	0	0	4	0	7	0	4	16
16:45	0	1	2	1	0	0	0	0	0	0	0	0	2	0	5	0	2	9
17:00	0	1	1	0	0	0	0	0	0	0	0	0	1	0	8	0	1	10
17:15	0	0	1	1	0	0	2	0	0	0	0	0	1	0	3	0	1	7
17:30	0	0	0	0	0	0	1	0	0	0	0	0	2	0	4	0	2	5
17:45	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6	0	0	8
Ped Total	0				0				0				13				13	
Bike Total		3	11	3		0	14	1		0	0	0		0	37	4		73

Intersection Turning Movement - Peak Hour Summary

Location:	#07R	File Name:	ITM-20-005-07R
Intersection:	Jefferson Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



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Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-20-005-01
Intersection:	Hancock Street & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Hancock Street Southbound			Camino Del Rio West Westbound			Hancock Street Northbound			Camino Del Rio West Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	565	72	3	35	15	16	301	0	1007
7:15	0	0	0	0	575	50	5	30	19	15	326	0	1020
7:30	0	0	0	0	456	63	1	27	16	21	374	0	958
7:45	0	0	0	0	492	73	3	30	13	18	332	0	961
8:00	0	0	0	0	503	51	10	43	24	13	304	0	948
8:15	0	0	0	0	563	48	3	41	15	20	358	0	1048
8:30	0	0	0	0	455	54	8	35	9	15	374	0	950
8:45	0	0	0	0	525	34	10	26	18	19	326	0	958
Total	0	0	0	0	4134	445	43	267	129	137	2695	0	7850
Approach%	-	-	-	-	90.3	9.7	9.8	60.8	29.4	4.8	95.2	-	
Total%	-	-	-	-	52.7	5.7	0.5	3.4	1.6	1.7	34.3	-	

AM Intersection Peak Hour: **07:00 to 08:00**

Volume	-	-	-	-	2,088	258	12	122	63	70	1,333	-	3,946
Approach%	-	-	-	-	89.0	11.0	6.1	61.9	32.0	5.0	95.0	-	
Total%	-	-	-	-	52.9	6.5	0.3	3.1	1.6	1.8	33.8	-	
PHF			#DIV/0!			0.92			0.91			0.89	0.97

PM	Hancock Street Southbound			Camino Del Rio West Westbound			Hancock Street Northbound			Camino Del Rio West Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	0	459	24	7	30	40	8	369	0	937
16:15	0	0	0	0	458	38	5	26	31	10	385	0	953
16:30	0	0	0	0	444	43	7	37	40	9	417	0	997
16:45	0	0	0	0	420	24	6	42	43	16	424	0	975
17:00	0	0	0	0	404	23	11	36	46	14	353	0	887
17:15	0	0	0	0	461	28	9	20	23	19	506	0	1066
17:30	0	0	0	0	642	25	7	22	24	22	557	0	1299
17:45	0	0	0	0	535	21	5	16	15	18	473	0	1083
Total	0	0	0	0	3823	226	57	229	262	116	3484	0	8197
Approach%	-	-	-	-	94.4	5.6	10.4	41.8	47.8	3.2	96.8	-	
Total%	-	-	-	-	46.6	2.8	0.7	2.8	3.2	1.4	42.5	-	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	-	-	-	-	2,042	97	32	94	108	73	1,889	-	4,335
Approach%	-	-	-	-	95.5	4.5	13.7	40.2	46.2	3.7	96.3	-	
Total%	-	-	-	-	47.1	2.2	0.7	2.2	2.5	1.7	43.6	-	
PHF			#DIV/0!			0.80			0.63			0.85	0.83

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-20-005-01
Intersection:	Hancock Street & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

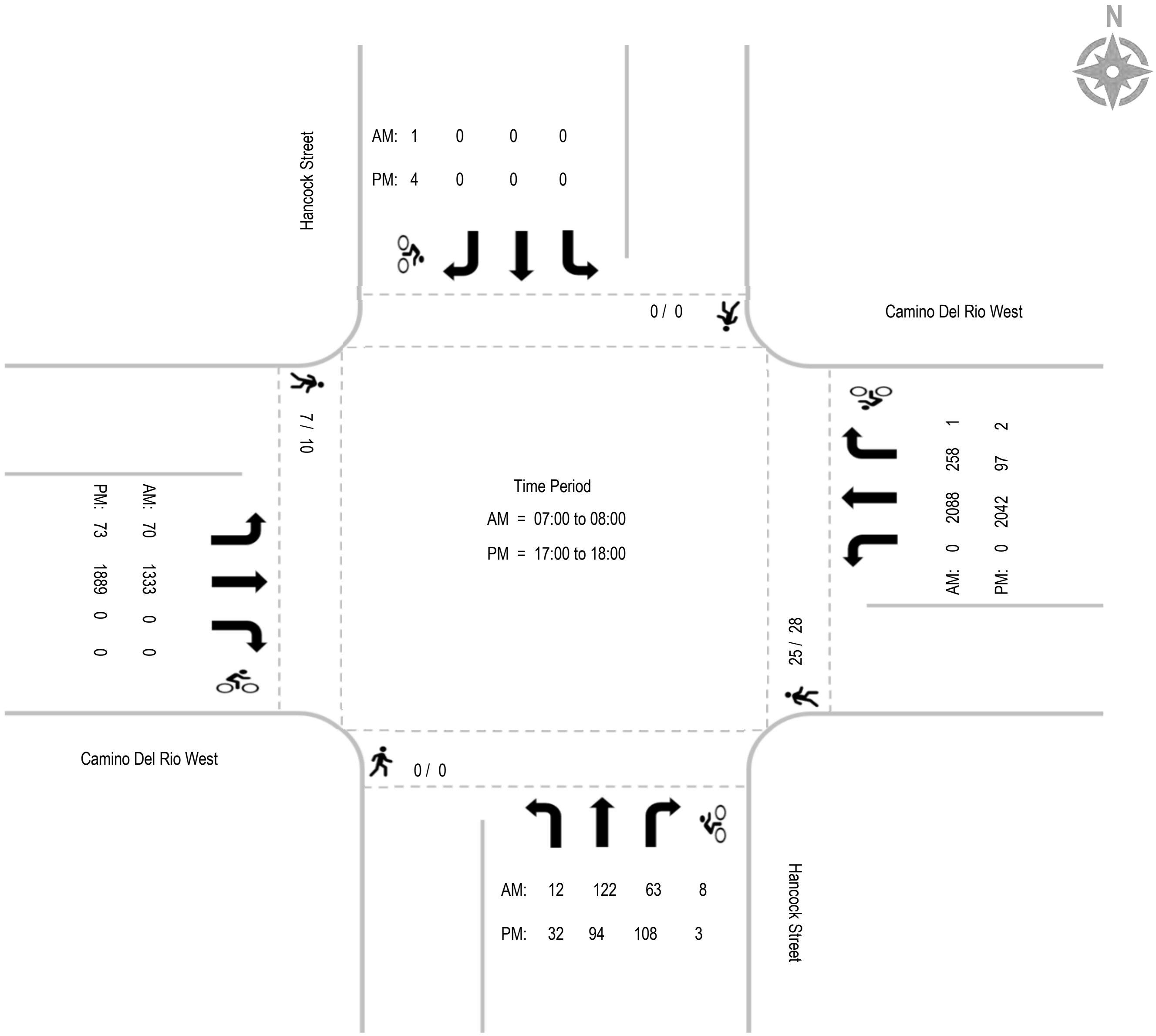
AM	Hancock Street Southbound				Camino Del Rio West Westbound				Hancock Street Northbound				Camino Del Rio West Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	4	0	0	0	0	0	2	0	0	0	0	0	4	3
7:15	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	6	0
7:30	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0
7:45	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	2	1
8:00	0	0	0	0	4	0	0	0	0	0	3	0	2	0	0	0	6	3
8:15	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	5	0
8:30	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	1	3
8:45	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	0
Ped Total	0				25				0				7				32	
Bike Total		0	1	0		0	1	0		0	8	0		0	0	0		10

PM	Hancock Street Southbound				Camino Del Rio West Westbound				Hancock Street Northbound				Camino Del Rio West Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	3	1
16:15	0	0	2	0	3	0	0	0	0	0	1	0	1	0	0	0	4	3
16:30	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	7	0
16:45	0	0	0	0	7	0	0	0	0	0	1	0	0	0	0	0	7	1
17:00	0	0	1	0	3	0	0	0	0	0	0	0	2	0	0	0	5	1
17:15	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1
17:30	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	6	0
17:45	0	0	0	0	3	0	2	0	0	0	0	0	1	0	0	0	4	2
Ped Total	0				28				0				10				38	
Bike Total		1	3	0		0	2	0		0	3	0		0	0	0		9

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-20-005-01
Intersection:	Hancock Street & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#02	File Name: ITM-20-005-02
Intersection:	Kurtz Street & Camino Del Rio West	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	Kurtz Street Southbound			Camino Del Rio West Westbound			Kurtz Street Northbound			Camino Del Rio West Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	30	21	7	54	486	0	0	0	0	0	282	0	880
7:15	23	19	9	52	577	0	0	0	0	0	338	3	1021
7:30	34	15	9	53	452	0	0	0	0	0	391	0	954
7:45	36	24	13	46	494	0	0	0	0	0	340	1	954
8:00	35	19	9	56	493	0	0	0	0	0	323	3	938
8:15	26	31	14	39	525	0	0	0	0	0	397	3	1035
8:30	30	23	14	50	507	0	0	0	0	0	418	5	1047
8:45	30	28	12	46	506	0	0	0	0	0	355	0	977
Total	244	180	87	396	4040	0	0	0	0	0	2844	15	7806
Approach%	47.7	35.2	17.0	8.9	91.1	-	-	-	-	-	99.5	0.5	
Total%	3.1	2.3	1.1	5.1	51.8	-	-	-	-	-	36.4	0.2	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	121	101	49	191	2,031	-	-	-	-	-	1,493	11	3,997
Approach%	44.6	37.3	18.1	8.6	91.4	-	-	-	-	-	99.3	0.7	
Total%	3.0	2.5	1.2	4.8	50.8	-	-	-	-	-	37.4	0.3	
PHF			0.95			0.98			#DIV/0!			0.89	0.95

PM	Kurtz Street Southbound			Camino Del Rio West Westbound			Kurtz Street Northbound			Camino Del Rio West Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	98	49	19	28	498	0	0	0	0	0	439	2	1133
16:15	86	33	13	16	493	0	0	0	0	0	498	0	1139
16:30	91	58	26	14	438	0	0	0	0	0	490	5	1122
16:45	81	50	23	32	469	0	0	0	0	0	513	5	1173
17:00	91	51	22	23	398	0	0	0	0	0	355	6	946
17:15	74	47	15	21	447	0	0	0	0	0	489	6	1099
17:30	80	46	19	24	590	0	0	0	0	0	495	6	1260
17:45	51	33	26	22	538	0	0	0	0	0	453	6	1129
Total	652	367	163	180	3871	0	0	0	0	0	3732	36	9001
Approach%	55.2	31.0	13.8	4.4	95.6	-	-	-	-	-	99.0	1.0	
Total%	7.2	4.1	1.8	2.0	43.0	-	-	-	-	-	41.5	0.4	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	356	190	81	90	1,898	-	-	-	-	-	1,940	12	4,567
Approach%	56.8	30.3	12.9	4.5	95.5	-	-	-	-	-	99.4	0.6	
Total%	7.8	4.2	1.8	2.0	41.6	-	-	-	-	-	42.5	0.3	
PHF			0.90			0.94			#DIV/0!			0.94	0.97

Intersection Turning Movement - Bicycle & Pedestrian Count

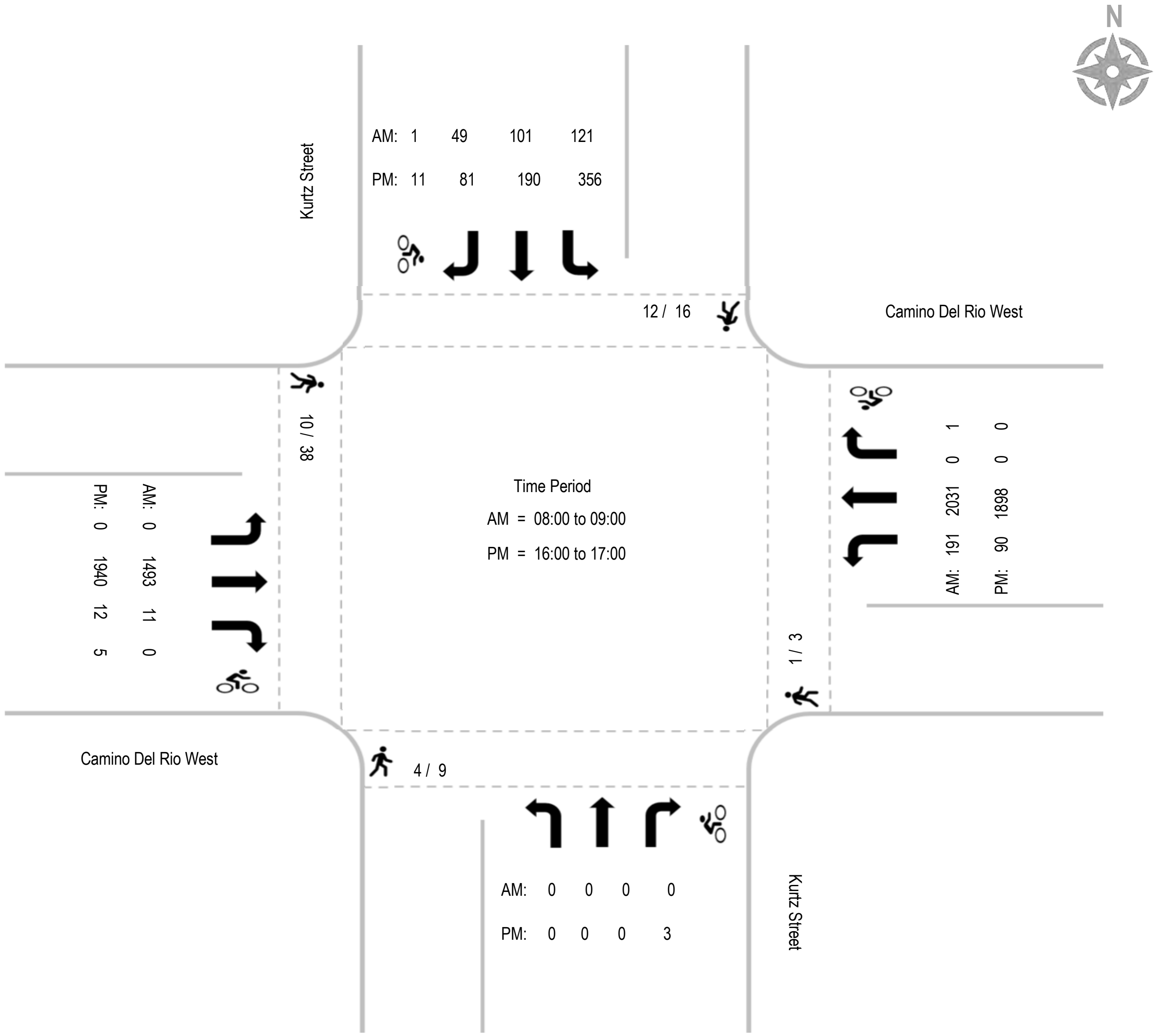
LINSCOTT LAW & GREENSPAN engineers	Location:	#02	File Name:	ITM-20-005-02
	Intersection:	Kurtz Street & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
	Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Kurtz Street Southbound				Camino Del Rio West Westbound				Kurtz Street Northbound				Camino Del Rio West Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
7:30	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0
7:45	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0
8:00	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0
8:15	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
8:30	5	0	1	0	0	0	0	0	1	0	0	0	5	0	0	0	11	1
8:45	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0
Ped Total	12				1				4				10				27	
Bike Total		0	1	0		0	1	0		0	0	0		0	0	0		2

PM	Kurtz Street Southbound				Camino Del Rio West Westbound				Kurtz Street Northbound				Camino Del Rio West Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0
16:15	2	0	0	0	2	0	0	0	0	0	0	0	1	0	2	0	5	2
16:30	0	1	4	0	0	0	0	0	2	0	0	0	2	0	0	0	4	5
16:45	1	0	1	1	1	0	0	0	1	0	0	0	4	0	0	0	7	2
17:00	0	0	1	0	0	0	0	0	1	0	0	0	10	0	0	0	11	1
17:15	1	0	0	0	0	0	0	0	2	0	2	0	5	0	2	0	8	4
17:30	5	0	2	0	0	0	0	0	2	0	1	0	7	0	1	0	14	4
17:45	6	0	1	0	0	0	0	0	1	0	0	0	5	0	0	0	12	1
Ped Total	16				3				9				38				66	
Bike Total		1	9	1		0	0	0		0	3	0		0	5	0		19

Intersection Turning Movement - Peak Hour Summary

Location:	#02	File Name:	ITM-20-005-02
Intersection:	Kurtz Street & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#06	File Name: ITM-20-005-06
Intersection:	Kurtz Street & Rosecrans Street	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	Kurtz Street Southbound			Rosecrans Street Westbound			Kurtz Street Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	11	40	0	7	30	0	27	0	49	0	41	23	228
7:15	13	51	0	4	40	0	26	1	38	0	82	27	282
7:30	14	39	1	11	53	0	21	0	40	0	82	31	292
7:45	13	37	0	10	47	0	41	1	49	0	91	20	309
8:00	21	47	0	12	56	0	18	0	47	0	65	22	288
8:15	19	42	0	10	58	0	24	0	53	1	82	37	326
8:30	9	42	2	8	57	0	34	0	44	0	59	26	281
8:45	15	45	3	18	53	0	39	0	45	1	72	31	322
Total	115	343	6	80	394	0	230	2	365	2	574	217	2328
Approach%	24.8	73.9	1.3	16.9	83.1	-	38.5	0.3	61.1	0.3	72.4	27.4	
Total%	4.9	14.7	0.3	3.4	16.9	-	9.9	0.1	15.7	0.1	24.7	9.3	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	64	176	5	48	224	-	115	-	189	2	278	116	1,217
Approach%	26.1	71.8	2.0	17.6	82.4	-	37.8	-	62.2	0.5	70.2	29.3	
Total%	5.3	14.5	0.4	3.9	18.4	-	9.4	-	15.5	0.2	22.8	9.5	
PHF			0.90			0.96			0.90			0.83	0.93

PM	Kurtz Street Southbound			Rosecrans Street Westbound			Kurtz Street Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	18	56	3	19	84	0	43	0	47	0	158	45	473
16:15	13	36	0	20	79	0	70	0	30	0	165	50	463
16:30	12	53	2	14	104	0	65	0	54	0	136	44	484
16:45	24	75	2	20	90	1	55	0	40	0	147	49	503
17:00	10	55	3	15	118	0	62	0	35	0	157	49	504
17:15	13	55	4	12	100	0	36	0	36	0	152	66	474
17:30	20	55	1	12	155	0	52	0	38	0	140	57	530
17:45	19	46	3	20	121	0	55	0	26	0	135	64	489
Total	129	431	18	132	851	1	438	0	306	0	1190	424	3920
Approach%	22.3	74.6	3.1	13.4	86.5	0.1	58.9	-	41.1	-	73.7	26.3	
Total%	3.3	11.0	0.5	3.4	21.7	0.0	11.2	-	7.8	-	30.4	10.8	

PM Intersection Peak Hour: **16:45 to 17:45**

Volume	67	240	10	59	463	1	205	-	149	-	596	221	2,011
Approach%	21.1	75.7	3.2	11.3	88.5	0.2	57.9	-	42.1	-	72.9	27.1	
Total%	3.3	11.9	0.5	2.9	23.0	0.0	10.2	-	7.4	-	29.6	11.0	
PHF			0.78			0.78			0.91			0.94	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

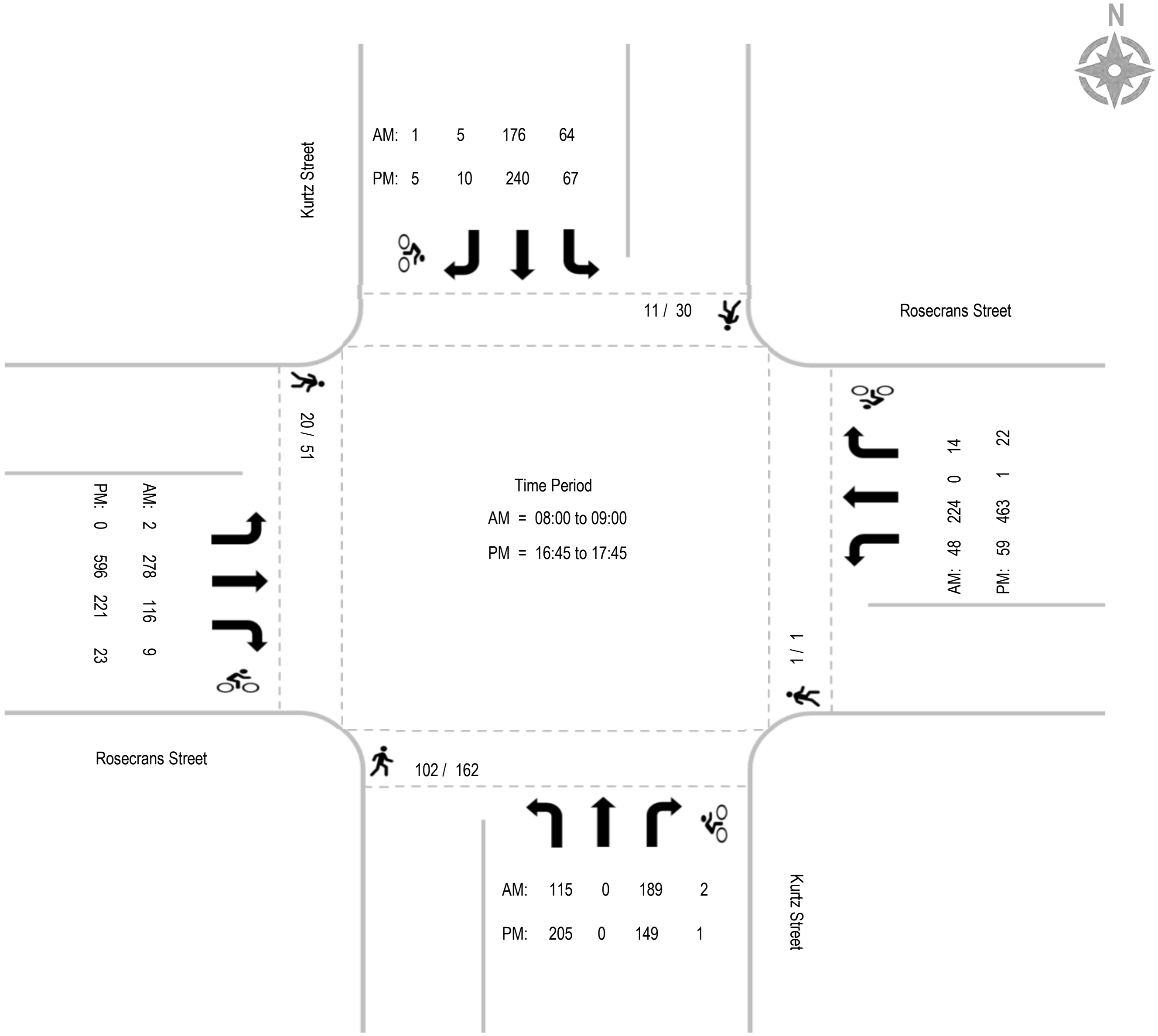
Location:	#06	File Name:	ITM-20-005-06
Intersection:	Kurtz Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Kurtz Street **Southbound**				Rosecrans Street **Westbound**				Kurtz Street **Northbound**				Rosecrans Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	5	0	14	0	0	0	0	0	0	0	14	5
7:15	1	0	0	0	0	0	0	0	5	0	0	0	3	0	1	0	9	1
7:30	1	0	0	0	0	0	0	0	9	0	0	1	1	0	2	0	11	3
7:45	2	0	0	0	1	0	2	0	3	0	0	0	1	0	1	0	7	3
8:00	4	0	0	0	0	0	2	0	20	0	0	0	4	0	2	0	28	4
8:15	1	0	0	0	0	0	1	0	24	0	0	0	2	0	1	0	27	2
8:30	1	0	1	0	0	0	2	0	16	1	0	0	6	0	1	0	23	5
8:45	1	0	0	0	0	0	0	2	11	0	0	0	3	0	1	0	15	3
Ped Total	11				1				102				20				134	
Bike Total		0	1	0		0	12	2		1	0	1		0	9	0		26

PM	Kurtz Street **Southbound**				Rosecrans Street **Westbound**				Kurtz Street **Northbound**				Rosecrans Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	2	0	0	1	0	1	1	0	23	0	0	0	6	1	4	1	31	9
16:15	4	1	0	0	1	0	3	0	20	0	0	0	3	0	2	0	28	6
16:30	2	0	0	0	0	0	3	0	28	0	0	0	8	0	4	0	38	7
16:45	3	1	0	0	0	0	4	0	8	0	0	0	5	0	2	0	16	7
17:00	5	0	0	0	0	0	0	0	22	0	0	0	7	0	4	0	34	4
17:15	4	0	0	0	0	0	2	0	18	0	0	0	7	0	2	0	29	4
17:30	9	0	0	1	0	0	3	0	24	0	1	0	8	0	1	0	41	6
17:45	1	1	0	0	0	0	5	0	19	0	0	0	7	0	2	0	27	8
Ped Total	30				1				162				51				244	
Bike Total		3	0	2		1	21	0		0	1	0		1	21	1		51

Intersection Turning Movement - Peak Hour Summary

Location:	#06	File Name:	ITM-20-005-06
Intersection:	Kurtz Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 | info@yourcountdata.com

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location: #05R		File Name: ITM-20-005-05R
Intersection: Sports Arena Blvd & Camino Del Rio West		Project: LLG Ref. 3-19-3171
Date of Count: Thursday, January 23, 2020		Old Town Campus

AM	Camino Del Rio West Southbound			Rosecrans Street Westbound			Rosecrans Street Northbound			Sports Arena Blvd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	445	70	27	37	1	23	266	41	39	28	18	995
7:15	0	453	59	29	34	3	15	295	64	38	44	25	1059
7:30	0	345	58	32	42	2	28	300	69	51	46	21	994
7:45	0	446	57	37	45	1	32	339	67	38	35	30	1127
8:00	0	441	83	31	25	2	21	326	59	36	40	17	1081
8:15	0	445	88	43	39	3	33	350	67	43	43	31	1185
8:30	0	403	80	44	49	10	27	347	53	44	34	35	1126
8:45	0	406	69	44	47	3	43	287	63	46	40	35	1083
Total	0	3384	564	287	318	25	222	2510	483	335	310	212	8650
Approach%	-	#REF!	14.3	45.6	50.5	4.0	6.9	78.1	15.0	39.1	36.2	24.7	
Total%	-	39.1	6.5	3.3	3.7	0.3	2.6	29.0	5.6	3.9	3.6	2.5	

AM Intersection Peak Hour: **07:45 to 08:45**

Volume	-	1,735	308	155	158	16	113	1,362	246	161	152	113	4,519
Approach%	-	84.9	15.1	47.1	48.0	4.9	6.6	79.1	14.3	37.8	35.7	26.5	
Total%	-	38.4	6.8	3.4	3.5	0.4	2.5	30.1	5.4	3.6	3.4	2.5	
PHF			0.96			0.80			0.96			0.91	0.95

PM	Camino Del Rio West Southbound			Rosecrans Street Westbound			Rosecrans Street Northbound			Sports Arena Blvd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	364	116	62	69	5	52	379	105	79	84	49	1364
16:15	0	350	129	43	82	2	46	392	104	97	100	39	1384
16:30	0	283	137	43	82	2	66	357	102	123	81	27	1303
16:45	0	346	132	64	82	5	61	396	99	101	73	23	1382
17:00	0	290	152	65	78	6	53	314	114	111	89	37	1309
17:15	0	395	121	57	88	6	67	436	105	94	98	55	1522
17:30	0	396	167	43	70	1	53	408	99	135	102	53	1527
17:45	0	372	174	90	85	9	53	353	86	112	103	42	1479
Total	0	2796	1128	467	636	36	451	3035	814	852	730	325	11270
Approach%	-	71.3	28.7	41.0	55.8	3.2	10.5	70.6	18.9	44.7	38.3	17.0	
Total%	-	24.8	10.0	4.1	5.6	0.3	4.0	26.9	7.2	7.6	6.5	2.9	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	-	1,453	614	255	321	22	226	1,511	404	452	392	187	5,837
Approach%	-	70.3	29.7	42.6	53.7	3.7	10.6	70.6	18.9	43.8	38.0	18.1	
Total%	-	24.9	10.5	4.4	5.5	0.4	3.9	25.9	6.9	7.7	6.7	3.2	
PHF			0.92			0.81			0.88			0.89	0.92

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#05R	File Name:	ITM-20-005-05R
Intersection:	Sports Arena Blvd & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

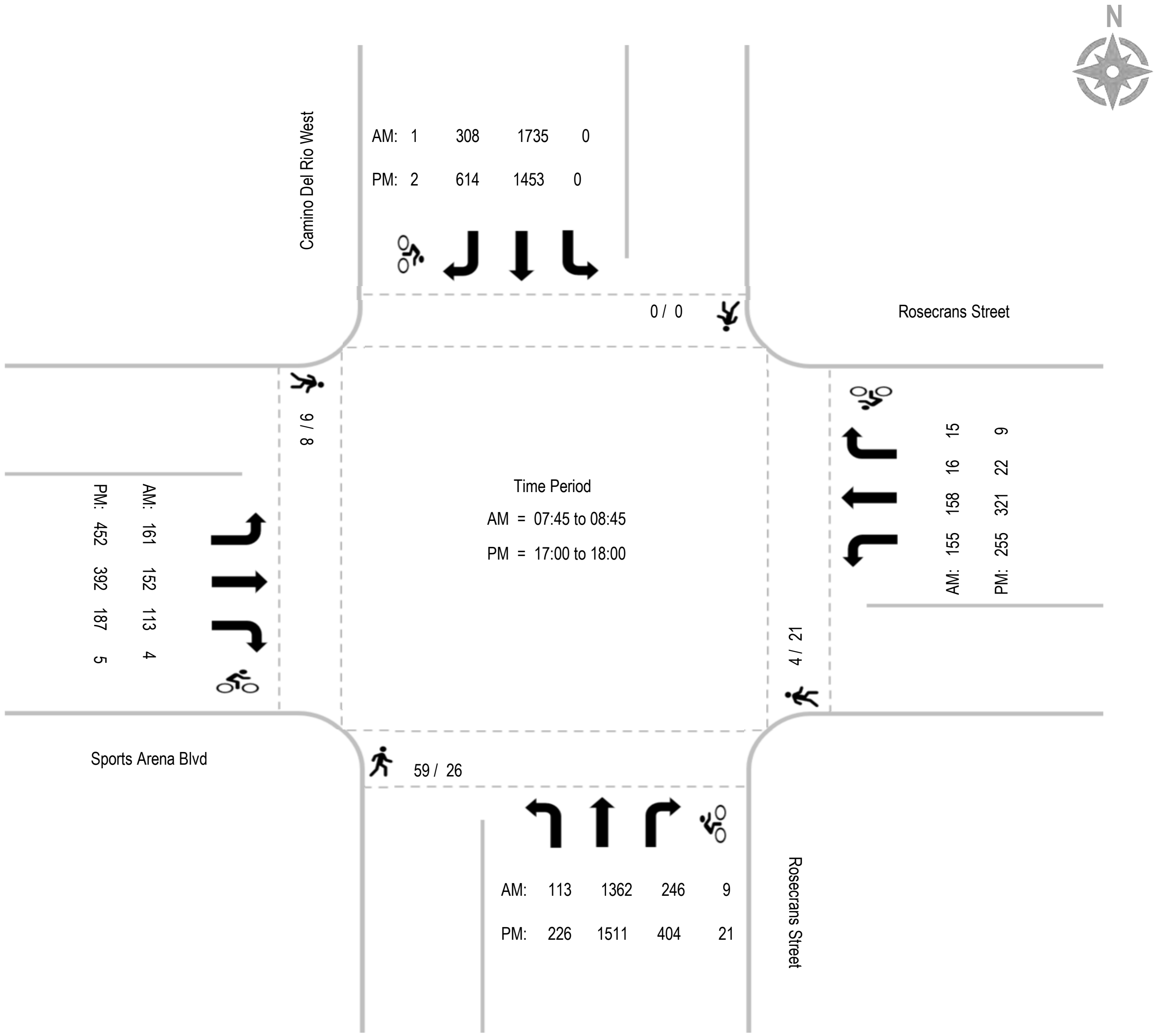
AM	Camino Del Rio West Southbound				Rosecrans Street Westbound				Rosecrans Street Northbound				Sports Arena Blvd Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	3	2	0	6	0	0	1	2	0	0	1	8	7
7:15	0	0	0	0	0	0	0	0	6	0	1	0	1	0	0	0	7	1
7:30	0	0	0	0	1	0	1	0	6	0	0	1	1	0	2	0	8	4
7:45	0	0	0	0	1	1	2	0	4	0	0	1	1	0	0	0	6	4
8:00	0	0	0	0	1	0	2	0	12	0	0	1	2	0	0	0	15	3
8:15	0	0	0	0	0	0	1	0	5	0	1	2	0	0	0	0	5	4
8:30	0	0	1	0	0	1	1	0	13	0	0	1	1	0	0	0	14	4
8:45	0	0	0	0	1	1	0	0	7	0	0	0	1	0	1	0	9	2
Ped Total	0				4				59				9				72	
Bike Total		0	1	0		6	9	0		0	2	7		0	3	1		29

PM	Camino Del Rio West Southbound				Rosecrans Street Westbound				Rosecrans Street Northbound				Sports Arena Blvd Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	1	0	0	9	0	0	4	2	0	1	0	11	6
16:15	0	0	0	0	2	1	0	0	2	1	0	1	0	0	0	0	4	3
16:30	0	0	0	0	2	0	1	0	3	0	0	2	0	0	2	0	5	5
16:45	0	0	0	0	5	0	1	0	2	0	0	0	1	0	0	0	8	1
17:00	0	0	0	0	5	0	0	0	1	0	1	7	2	0	1	0	8	9
17:15	0	0	0	0	2	0	1	0	4	0	1	1	0	0	1	0	6	4
17:30	0	0	0	0	3	1	1	0	4	0	1	1	3	0	0	0	10	4
17:45	0	0	2	0	2	1	1	0	1	0	0	1	0	0	0	0	3	5
Ped Total	0				21				26				8				55	
Bike Total		0	2	0		4	5	0		1	3	17		0	5	0		37

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#05R	File Name:	ITM-20-005-05R
Intersection:	Sports Arena Blvd & Camino Del Rio West	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#04	File Name: ITM-20-005-04
Intersection:	Midway Drive & Rosecrans Street	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	Midway Drive Southbound			Rosecrans Street Westbound			Midway Drive Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	63	43	19	35	409	16	21	47	24	28	229	10	944
7:15	44	34	19	35	388	29	22	50	10	22	332	9	994
7:30	47	44	25	36	309	40	18	70	34	24	352	11	1010
7:45	51	47	35	46	373	37	26	85	38	34	319	18	1109
8:00	49	61	25	42	374	18	7	79	28	30	306	13	1032
8:15	52	45	29	57	332	32	16	68	48	39	355	16	1089
8:30	44	43	26	61	321	29	24	72	34	40	332	21	1047
8:45	42	66	13	29	287	28	18	92	57	44	314	10	1000
Total	392	383	191	341	2793	229	152	563	273	261	2539	108	8225
Approach%	40.6	39.6	19.8	10.1	83.1	6.8	15.4	57.0	27.6	9.0	87.3	3.7	
Total%	4.8	4.7	2.3	4.1	34.0	2.8	1.8	6.8	3.3	3.2	30.9	1.3	

AM Intersection Peak Hour: **07:45 to 08:45**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	196	196	115	206	1,400	116	73	304	148	143	1,312	68	4,277
Approach%	38.7	38.7	22.7	12.0	81.3	6.7	13.9	57.9	28.2	9.4	86.1	4.5	
Total%	4.6	4.6	2.7	4.8	32.7	2.7	1.7	7.1	3.5	3.3	30.7	1.6	
PHF			0.94			0.94			0.88			0.93	0.96

PM	Midway Drive Southbound			Rosecrans Street Westbound			Midway Drive Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	66	89	4	79	201	24	26	123	67	46	361	8	1094
16:15	46	81	15	91	224	23	11	116	54	50	426	9	1146
16:30	59	112	14	53	174	13	23	119	54	31	371	11	1034
16:45	79	65	27	78	262	32	18	120	68	47	381	12	1189
17:00	61	80	41	62	199	14	25	121	67	47	360	15	1092
17:15	73	98	24	66	281	31	32	106	41	47	358	6	1163
17:30	53	98	19	72	296	27	32	122	55	37	399	23	1233
17:45	60	71	49	93	294	36	26	137	64	52	365	21	1268
Total	497	694	193	594	1931	200	193	964	470	357	3021	105	9219
Approach%	35.9	50.1	13.9	21.8	70.9	7.3	11.9	59.3	28.9	10.2	86.7	3.0	
Total%	5.4	7.5	2.1	6.4	20.9	2.2	2.1	10.5	5.1	3.9	32.8	1.1	

PM Intersection Peak Hour: **17:00 to 18:00**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	247	347	133	293	1,070	108	115	486	227	183	1,482	65	4,756
Approach%	34.0	47.7	18.3	19.9	72.7	7.3	13.9	58.7	27.4	10.6	85.7	3.8	
Total%	5.2	7.3	2.8	6.2	22.5	2.3	2.4	10.2	4.8	3.8	31.2	1.4	
PHF			0.93			0.87			0.91			0.94	0.94

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

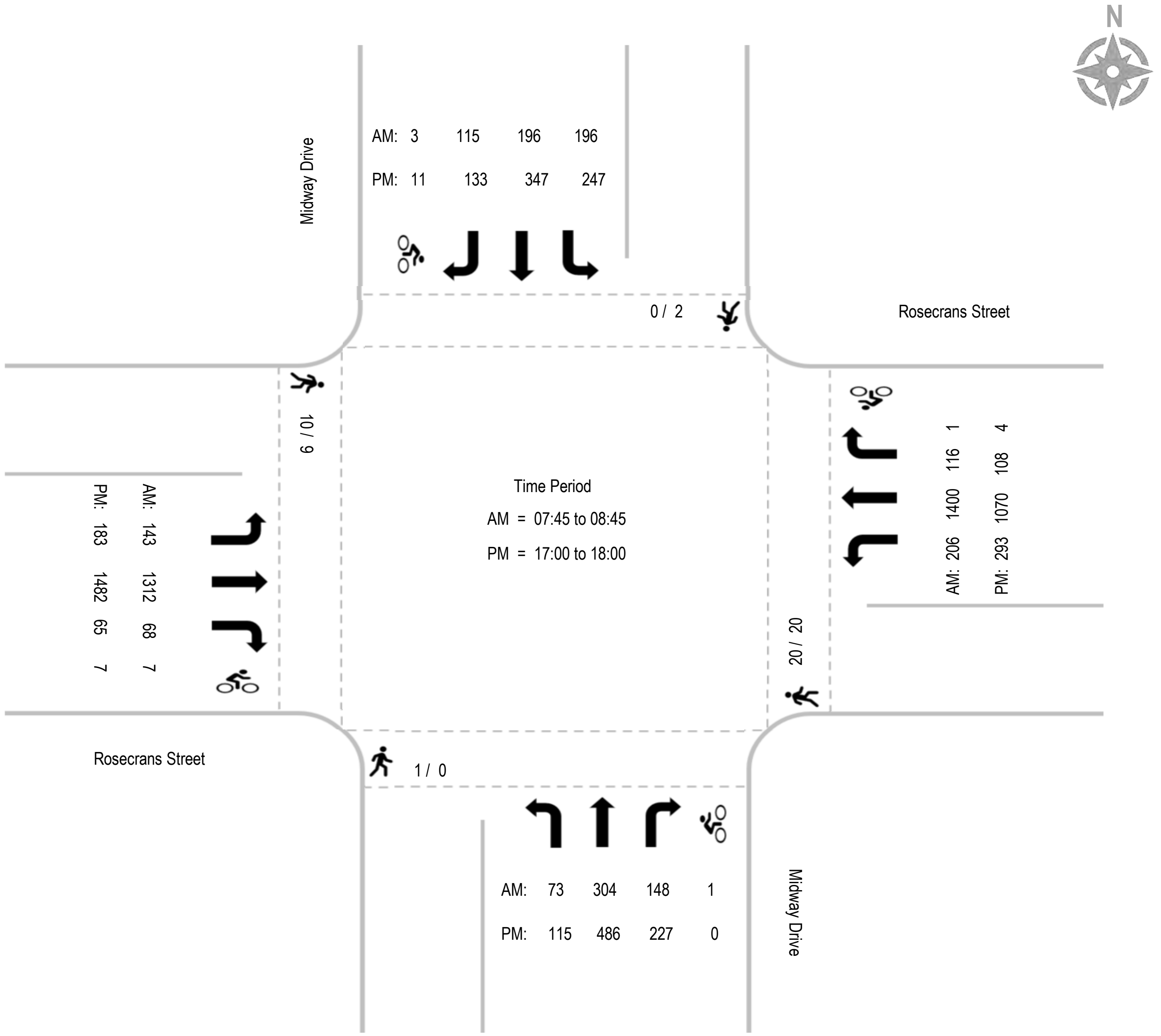
Location:	#04	File Name:	ITM-20-005-04
Intersection:	Midway Drive & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Midway Drive Southbound				Rosecrans Street Westbound				Midway Drive Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	3	1
7:15	0	0	0	0	2	0	0	0	0	0	0	0	1	0	2	0	3	2
7:30	0	0	0	0	3	0	1	0	0	0	0	0	4	0	0	0	7	1
7:45	0	0	0	1	5	0	0	0	0	0	0	0	0	0	2	0	5	3
8:00	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	1
8:15	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	2	1
8:30	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	1	3
8:45	0	0	0	0	4	0	0	0	0	0	0	0	3	0	0	0	7	0
Ped Total	0				20				1				10				31	
Bike Total		1	1	1		0	1	0		0	1	0		0	7	0		12

PM	Midway Drive Southbound				Rosecrans Street Westbound				Midway Drive Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3
16:15	0	0	0	0	4	0	1	0	0	0	0	0	0	0	2	0	4	3
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:45	2	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	5	1
17:00	0	0	0	0	3	0	0	0	0	0	0	0	2	0	1	0	5	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	7	1
17:30	0	0	10	0	6	0	0	0	0	0	0	0	0	0	1	0	6	11
17:45	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	4	1
Ped Total	2				20				0				9				31	
Bike Total		0	11	0		1	3	0		0	0	0		0	7	0		22

Intersection Turning Movement - Peak Hour Summary

Location:	#04	File Name:	ITM-20-005-04
Intersection:	Midway Drive & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#03	File Name: ITM-20-005-03
Intersection:	Lytton Street & Rosecrans Street	Project: LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020	Old Town Campus

AM	Lytton Street Southbound			Rosecrans Street Westbound			Lytton Street Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	72	49	2	35	333	80	164	115	9	1	175	105	1140
7:15	104	92	2	19	374	81	166	121	3	2	197	130	1291
7:30	89	78	5	26	354	47	154	67	19	0	266	124	1229
7:45	90	79	0	32	352	45	133	63	51	3	309	133	1290
8:00	75	65	0	36	395	40	146	77	37	2	279	113	1265
8:15	83	57	1	28	347	31	129	50	31	3	272	105	1137
8:30	60	50	1	60	393	54	141	61	14	1	285	104	1224
8:45	61	52	3	42	352	44	128	67	28	4	291	113	1185
Total	634	522	14	278	2900	422	1161	621	192	16	2074	927	9761
Approach%	54.2	44.6	1.2	7.7	80.6	11.7	58.8	31.5	9.7	0.5	68.7	30.7	
Total%	6.5	5.3	0.1	2.8	29.7	4.3	11.9	6.4	2.0	0.2	21.2	9.5	

AM Intersection Peak Hour: 07:15 to 08:15

	SB Left	SB Thru	SB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	EB Left	EB Thru	EB Right	Total
Volume	358	314	7	113	1,475	213	599	328	110	7	1,051	500	5,075
Approach%	52.7	46.2	1.0	6.3	81.9	11.8	57.8	31.6	10.6	0.4	67.5	32.1	
Total%	7.1	6.2	0.1	2.2	29.1	4.2	11.8	6.5	2.2	0.1	20.7	9.9	
PHF			0.86			0.95			0.89			0.88	0.98

PM	Lytton Street Southbound			Rosecrans Street Westbound			Lytton Street Northbound			Rosecrans Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	51	61	4	29	307	66	106	85	31	11	394	179	1324
16:15	50	80	1	39	297	77	100	81	24	3	379	147	1278
16:30	53	54	2	49	242	88	142	91	37	5	315	141	1219
16:45	62	73	7	35	282	88	100	92	23	4	336	141	1243
17:00	50	56	2	36	291	81	130	89	31	11	303	101	1181
17:15	65	52	0	38	286	95	106	100	33	7	358	114	1254
17:30	57	68	0	45	371	100	111	72	44	7	361	124	1360
17:45	46	41	4	46	318	97	100	69	36	5	309	89	1160
Total	434	485	20	317	2394	692	895	679	259	53	2755	1036	10019
Approach%	46.2	51.7	2.1	9.3	70.3	20.3	48.8	37.0	14.1	1.4	71.7	27.0	
Total%	4.3	4.8	0.2	3.2	23.9	6.9	8.9	6.8	2.6	0.5	27.5	10.3	

PM Intersection Peak Hour: 16:00 to 17:00

	SB Left	SB Thru	SB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	EB Left	EB Thru	EB Right	Total
Volume	216	268	14	152	1,128	319	448	349	115	23	1,424	608	5,064
Approach%	43.4	53.8	2.8	9.5	70.5	19.9	49.1	38.3	12.6	1.1	69.3	29.6	
Total%	4.3	5.3	0.3	3.0	22.3	6.3	8.8	6.9	2.3	0.5	28.1	12.0	
PHF			0.88			0.97			0.84			0.88	0.96

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

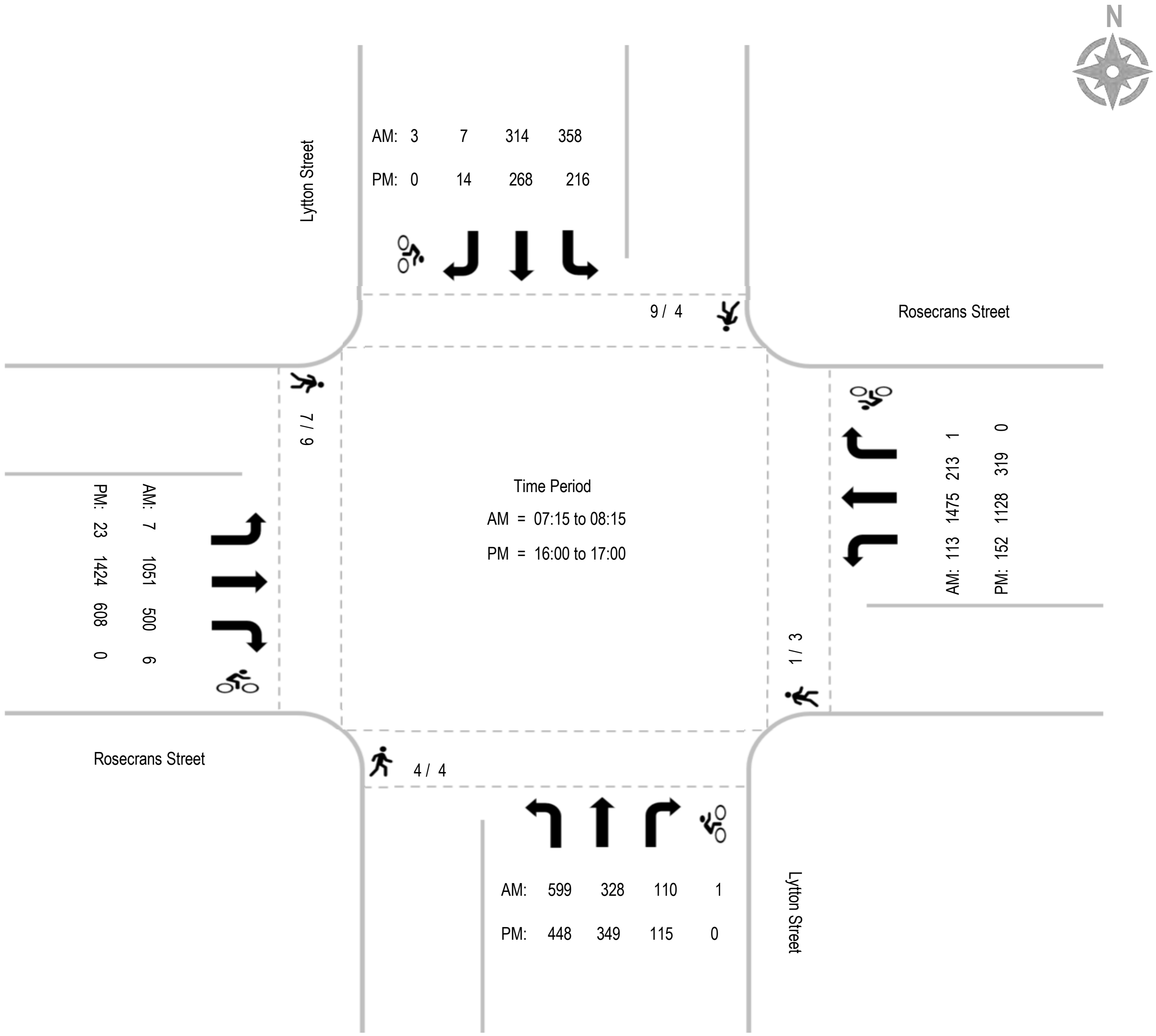
Location:	#03	File Name:	ITM-20-005-03
Intersection:	Lytton Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Lytton Street Southbound				Rosecrans Street Westbound				Lytton Street Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	1
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	2
7:45	1	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	3	2
8:00	3	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	3	3
8:15	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0
8:30	1	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	3	2
8:45	1	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	5	0
Ped Total	9				1				4				7				21	
Bike Total		0	2	1		0	1	0		0	1	0		0	6	0		11

PM	Lytton Street Southbound				Rosecrans Street Westbound				Lytton Street Northbound				Rosecrans Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
16:15	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	4	0
16:30	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	2	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	6	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	0
Ped Total	4				3				4				9				20	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers			
Location:	#03	File Name:	ITM-20-005-03
Intersection:	Lytton Street & Rosecrans Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#35	File Name:	ITM-20-005-35
Intersection:	Barnett Avenue & Truxton Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus

AM	Barnett Avenue Southbound			- Westbound			Barnett Avenue Northbound			Truxton Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	129	41	0	0	0	88	275	0	3	0	14	550
7:15	0	187	19	0	0	0	76	208	0	5	0	20	515
7:30	0	197	31	0	0	0	121	200	0	5	0	38	592
7:45	0	182	44	0	0	0	130	239	0	9	0	32	636
8:00	0	149	35	0	0	0	158	196	0	28	0	41	607
8:15	0	187	38	0	0	0	116	203	0	25	0	42	611
8:30	0	179	60	0	0	0	150	215	0	17	0	41	662
8:45	0	142	41	0	0	0	158	186	0	18	0	66	611
Total	0	1352	309	0	0	0	997	1722	0	110	0	294	4784
Approach%	-	81.4	18.6	-	-	-	36.7	63.3	-	27.2	-	72.8	
Total%	-	28.3	6.5	-	-	-	20.8	36.0	-	2.3	-	6.1	

AM Intersection Peak Hour: **07:45 to 08:45**

Volume	-	697	177	-	-	-	554	853	-	79	-	156	2,516
Approach%	-	79.7	20.3	-	-	-	39.4	60.6	-	33.6	-	66.4	
Total%	-	27.7	7.0	-	-	-	22.0	33.9	-	3.1	-	6.2	
PHF			0.91			#DIV/0!			0.95			0.85	0.95

PM	Barnett Avenue Southbound			- Westbound			Barnett Avenue Northbound			Truxton Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	225	49	0	0	0	109	197	0	35	0	116	731
16:15	0	212	36	0	0	0	83	201	0	28	0	114	674
16:30	0	201	40	0	0	0	95	195	0	32	0	79	642
16:45	0	198	39	0	0	0	94	180	0	25	0	72	608
17:00	0	205	48	0	0	0	96	195	0	35	0	91	670
17:15	0	187	47	0	0	0	53	173	0	46	0	97	603
17:30	0	171	50	0	0	0	89	193	0	40	0	91	634
17:45	0	188	34	0	0	0	80	154	0	47	0	66	569
Total	0	1587	343	0	0	0	699	1488	0	288	0	726	5131
Approach%	-	82.2	17.8	-	-	-	32.0	68.0	-	28.4	-	71.6	
Total%	-	30.9	6.7	-	-	-	13.6	29.0	-	5.6	-	14.1	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	-	836	164	-	-	-	381	773	-	120	-	381	2,655
Approach%	-	83.6	16.4	-	-	-	33.0	67.0	-	24.0	-	76.0	
Total%	-	31.5	6.2	-	-	-	14.4	29.1	-	4.5	-	14.4	
PHF			0.91			#DIV/0!			0.94			0.83	0.91

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers	Location:	#35	File Name:	ITM-20-005-35
	Intersection:	Barnett Avenue & Truxton Avenue	Project:	LLG Ref. 3-19-3171
	Date of Count:	Thursday, January 30, 2020		Old Town Campus

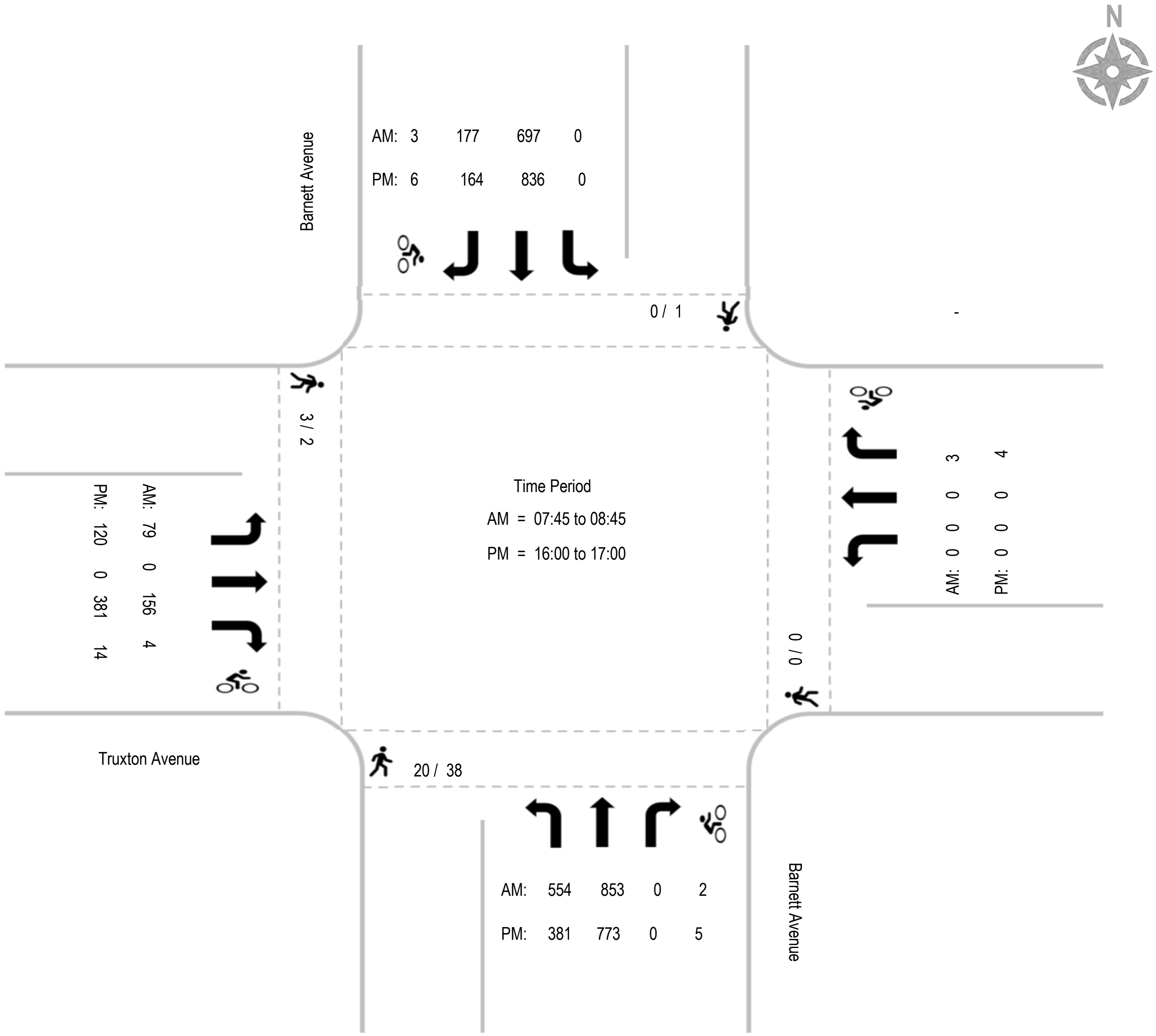
AM	Barnett Avenue Southbound				- Westbound				Barnett Avenue Northbound				Truxton Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	1	0	0	0	0	3	0	0	0	1	0	0	1	4	2
7:15	0	0	0	0	0	0	0	0	2	1	0	0	1	1	0	1	3	3
7:30	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	1	3
7:45	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	6	1
8:00	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	3	1
8:15	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
8:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
8:45	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	4	1
Ped Total	0				0				20				3				23	
Bike Total		0	1	2		0	3	0		2	0	0		2	0	2		12

PM	Barnett Avenue Southbound				- Westbound				Barnett Avenue Northbound				Truxton Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	2	0	0	0	0	6	0	0	0	0	2	0	1	6	5
16:15	0	0	0	2	0	0	1	0	6	2	0	0	0	4	0	1	6	10
16:30	0	0	0	0	0	0	1	0	4	0	1	0	0	2	0	1	4	5
16:45	1	0	0	1	0	0	0	0	8	1	1	0	1	0	0	0	10	3
17:00	0	0	0	1	0	0	1	0	4	0	0	0	1	1	0	0	5	3
17:15	0	0	0	0	0	0	1	0	6	0	0	0	0	1	0	0	6	2
17:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
17:45	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	2	1
Ped Total	1				0				38				2				41	
Bike Total		0	0	6		0	4	0		3	2	0		11	0	3		29

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#35	File Name:	ITM-20-005-35
Intersection:	Barnett Avenue & Truxton Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#33R	File Name:	ITM-20-005-33R
Intersection:	Midway Drive & Enterprise Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus

AM	Midway Drive Southbound			Enterprise Street Westbound			Midway Drive Northbound			- Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	66	0	0	0	24	0	94	7	0	0	0	191
7:15	0	59	0	0	0	12	0	99	9	0	0	0	179
7:30	0	61	0	0	0	12	0	112	8	0	0	0	193
7:45	0	73	0	0	0	19	0	125	12	0	0	0	229
8:00	0	74	0	0	0	21	0	130	2	0	0	0	227
8:15	0	75	0	0	0	47	0	114	2	0	0	0	238
8:30	0	96	0	0	0	47	0	122	2	0	0	0	267
8:45	1	110	0	0	0	61	0	123	1	0	0	0	296
Total	1	614	0	0	0	243	0	919	43	0	0	0	1820
Approach%	0.2	99.8	-	-	-	100.0	-	95.5	4.5	-	-	-	
Total%	0.1	33.7	-	-	-	13.4	-	50.5	2.4	-	-	-	

AM Intersection Peak Hour: **08:00 to 09:00**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	1	355	-	-	-	176	-	489	7	-	-	-	1,028
Approach%	0.3	99.7	-	-	-	100.0	-	98.6	1.4	-	-	-	
Total%	0.1	34.5	-	-	-	17.1	-	47.6	0.7	-	-	-	
PHF			0.80			0.72			0.94			#DIV/0!	0.87

PM	Midway Drive Southbound			Enterprise Street Westbound			Midway Drive Northbound			- Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	155	0	0	0	55	0	168	0	0	0	0	378
16:15	0	170	0	0	0	61	0	154	2	0	0	0	387
16:30	2	175	0	0	0	54	0	161	2	0	0	0	394
16:45	0	201	0	0	0	41	0	155	1	0	0	0	398
17:00	0	179	0	0	0	48	0	182	2	0	0	0	411
17:15	0	145	0	0	0	59	0	171	2	0	0	0	377
17:30	0	172	0	0	0	51	0	152	0	0	0	0	375
17:45	0	182	0	0	0	33	0	135	2	0	0	0	352
Total	2	1379	0	0	0	402	0	1278	11	0	0	0	3072
Approach%	0.1	99.9	-	-	-	100.0	-	99.1	0.9	-	-	-	
Total%	0.1	44.9	-	-	-	13.1	-	41.6	0.4	-	-	-	

PM Intersection Peak Hour: **16:15 to 17:15**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	2	725	-	-	-	204	-	652	7	-	-	-	1,590
Approach%	0.3	99.7	-	-	-	100.0	-	98.9	1.1	-	-	-	
Total%	0.1	45.6	-	-	-	12.8	-	41.0	0.4	-	-	-	
PHF			0.90			0.84			0.90			#DIV/0!	0.97

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers	Location:	#33R	File Name:	ITM-20-005-33R
	Intersection:	Midway Drive & Enterprise Street	Project:	LLG Ref. 3-19-3171
	Date of Count:	Thursday, January 30, 2020		Old Town Campus

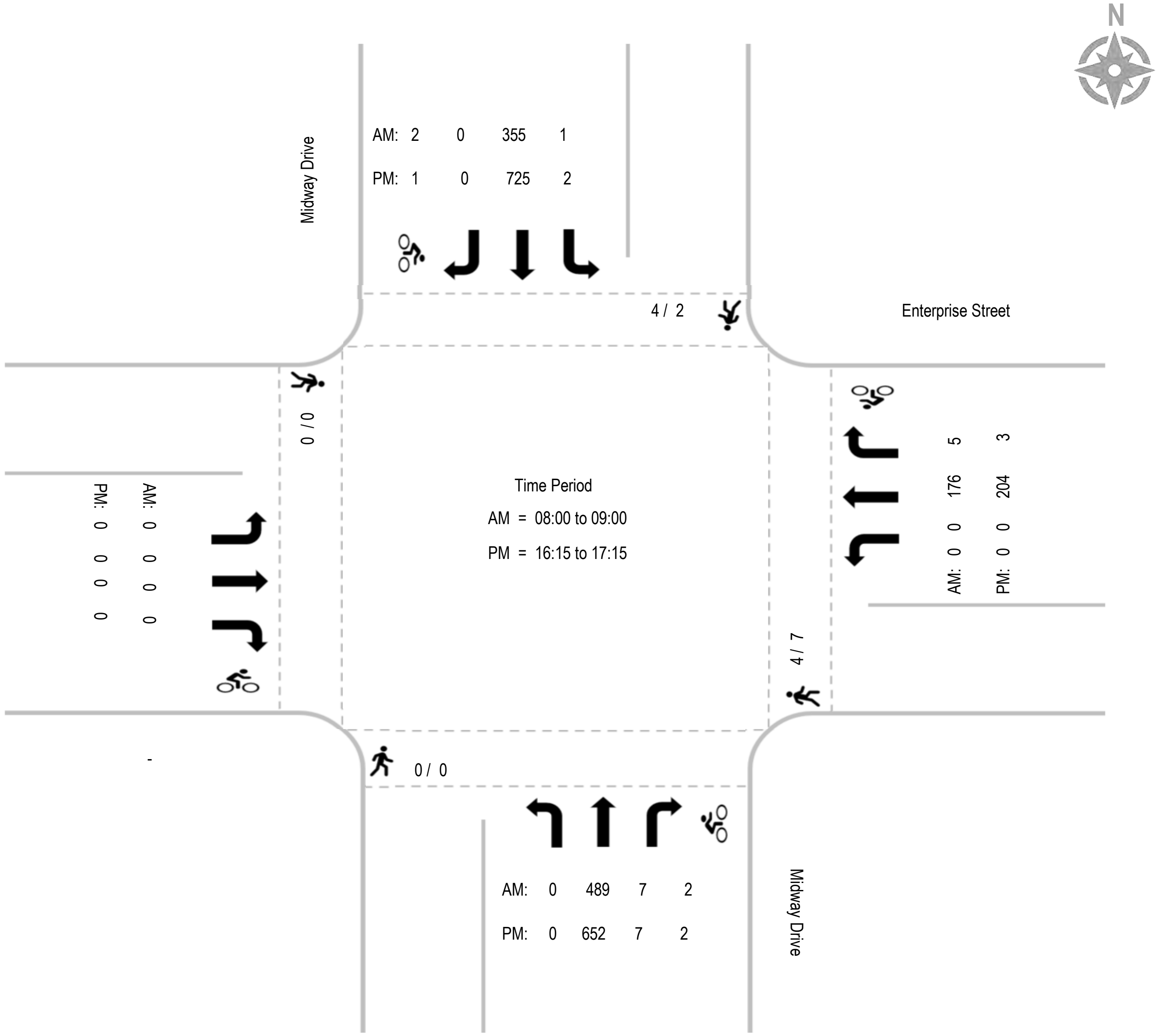
AM	Midway Drive Southbound				Enterprise Street Westbound				Midway Drive Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
7:15	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	1	3
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:15	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0
8:30	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	2
8:45	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	2
Ped Total	4				4				0				0				8	
Bike Total		0	2	0		1	0	4		0	0	2		0	0	0		9

PM	Midway Drive Southbound				Enterprise Street Westbound				Midway Drive Northbound				- Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	2	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	3
17:15	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	6	0
17:30	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	2				7				0				0				9	
Bike Total		1	0	0		0	0	3		0	1	1		0	0	0		6

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#33R	File Name:	ITM-20-005-33R
Intersection:	Midway Drive & Enterprise Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#19R	File Name: ITM-20-005-19R
Intersection:	Barnett Avenue & Midway Drive	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	Midway Drive			Barnett Avenue			-			Barnett Avenue			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	54	0	6	0	351	87	0	0	0	0	172	0	670
7:15	61	0	10	0	301	111	0	0	0	0	224	0	707
7:30	53	0	10	0	279	136	0	0	0	0	240	0	718
7:45	71	0	3	0	289	143	0	0	0	0	216	0	722
8:00	91	0	13	0	325	116	0	0	0	0	207	0	752
8:15	62	0	8	0	352	109	0	0	0	0	210	0	741
8:30	71	0	10	0	324	126	0	0	0	0	222	0	753
8:45	88	0	16	0	312	132	0	0	0	0	219	0	767
Total	551	0	76	0	2533	960	0	0	0	0	1710	0	5830
Approach%	87.9	-	12.1	-	72.5	27.5	-	-	-	-	100.0	-	
Total%	9.5	-	1.3	-	43.4	16.5	-	-	-	-	29.3	-	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	312	-	47	-	1,313	483	-	-	-	-	858	-	3,013
Approach%	86.9	-	13.1	-	73.1	26.9	-	-	-	-	100.0	-	
Total%	10.4	-	1.6	-	43.6	16.0	-	-	-	-	28.5	-	
PHF			0.86			0.97			#DIV/0!			0.97	0.98

PM	Midway Drive			Barnett Avenue			-			Barnett Avenue			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	143	0	24	0	234	137	0	0	0	0	304	0	842
16:15	210	0	25	0	243	124	0	0	0	0	302	0	904
16:30	150	0	15	0	277	151	0	0	0	0	288	0	881
16:45	165	0	10	0	280	145	0	0	0	0	270	0	870
17:00	156	0	16	0	282	160	0	0	0	0	249	0	863
17:15	175	0	16	0	286	152	0	0	0	0	279	0	908
17:30	160	0	16	0	246	152	0	0	0	0	245	0	819
17:45	169	0	9	0	172	144	0	0	0	0	157	0	651
Total	1328	0	131	0	2020	1165	0	0	0	0	2094	0	6738
Approach%	91.0	-	9.0	-	63.4	36.6	-	-	-	-	100.0	-	
Total%	19.7	-	1.9	-	30.0	17.3	-	-	-	-	31.1	-	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	646	-	57	-	1,125	608	-	-	-	-	1,086	-	3,522
Approach%	91.9	-	8.1	-	64.9	35.1	-	-	-	-	100.0	-	
Total%	18.3	-	1.6	-	31.9	17.3	-	-	-	-	30.8	-	
PHF			0.92			0.98			#DIV/0!			0.94	0.97

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#19R	File Name:	ITM-20-005-19R
Intersection:	Barnett Avenue & Midway Drive	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

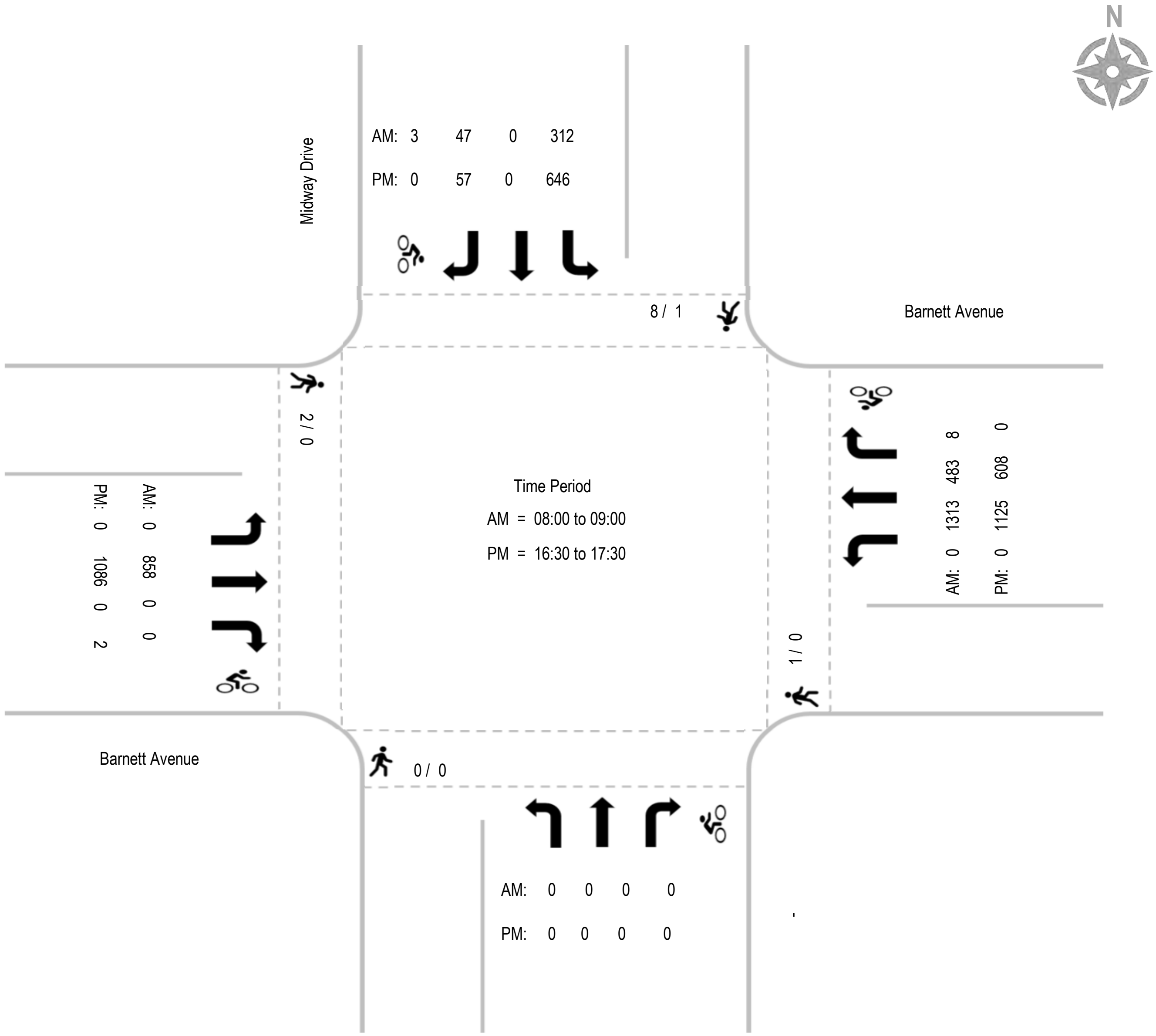
AM	Midway Drive Southbound				Barnett Avenue Westbound				- Northbound				Barnett Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	2
7:15	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	1
7:30	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	1
7:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15	4	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	4	4
8:30	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	8				1				0				2				11	
Bike Total		2	0	1		0	7	1		0	0	0		0	0	0		11

PM	Midway Drive Southbound				Barnett Avenue Westbound				- Northbound				Barnett Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ped Total	1				0				0				0				1	
Bike Total		0	0	0		0	0	0		0	0	0		0	2	0		2

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#19R	File Name:	ITM-20-005-19R
Intersection:	Barnett Avenue & Midway Drive	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#16R	File Name:	ITM-20-005-16R
Intersection:	Pacific Highway & Old Town Transit Center Bus Access Road	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway			Transit Center Road			Pacific Highway			County Health Driveway			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	28	52	4	8	0	8	11	70	9	0	0	0	190
7:15	47	87	9	5	0	7	11	86	12	1	0	4	269
7:30	35	82	7	8	0	13	21	123	12	2	0	3	306
7:45	18	84	15	8	0	8	22	185	8	1	0	1	350
8:00	21	54	9	8	1	9	24	124	5	2	0	3	260
8:15	24	70	18	9	1	12	19	104	6	2	0	3	268
8:30	8	66	11	11	0	12	9	84	6	4	0	1	212
8:45	14	67	4	5	0	7	16	79	8	0	0	1	201
Total	195	562	77	62	2	76	133	855	66	12	0	16	2056
Approach%	23.4	67.4	9.2	44.3	1.4	54.3	12.6	81.1	6.3	42.9	-	57.1	
Total%	9.5	27.3	3.7	3.0	0.1	3.7	6.5	41.6	3.2	0.6	-	0.8	

AM Intersection Peak Hour: 07:15 to 08:15

Volume	121	307	40	29	1	37	78	518	37	6	-	11	1,185
Approach%	25.9	65.6	8.5	43.3	1.5	55.2	12.3	81.8	5.8	35.3	-	64.7	
Total%	10.2	25.9	3.4	2.4	0.1	3.1	6.6	43.7	3.1	0.5	-	0.9	
PHF			0.82			0.80			0.74			0.85	0.85

PM	Pacific Highway			Transit Center Road			Pacific Highway			County Health Driveway			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	18	93	0	17	0	16	5	150	9	6	0	8	322
16:15	12	110	0	20	0	9	7	170	11	6	0	6	351
16:30	11	126	0	27	1	20	3	171	9	15	0	27	410
16:45	9	116	0	13	0	15	6	155	6	9	0	11	340
17:00	17	110	0	20	0	11	5	135	2	20	0	27	347
17:15	20	122	0	20	0	16	2	111	11	11	0	11	324
17:30	7	123	0	12	0	12	2	98	4	4	0	10	272
17:45	11	106	0	23	0	18	2	92	7	3	0	6	268
Total	105	906	0	152	1	117	32	1082	59	74	0	106	2634
Approach%	10.4	89.6	-	56.3	0.4	43.3	2.7	92.2	5.0	41.1	-	58.9	
Total%	4.0	34.4	-	5.8	0.0	4.4	1.2	41.1	2.2	2.8	-	4.0	

PM Intersection Peak Hour: 16:15 to 17:15

Volume	49	462	-	80	1	55	21	631	28	50	-	71	1,448
Approach%	9.6	90.4	-	58.8	0.7	40.4	3.1	92.8	4.1	41.3	-	58.7	
Total%	3.4	31.9	-	5.5	0.1	3.8	1.5	43.6	1.9	3.5	-	4.9	
PHF			0.93			0.71			0.90			0.64	0.88

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#16R	File Name:	ITM-20-005-16R
Intersection:	Pacific Highway & Old Town Transit Center Bus Access Road	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

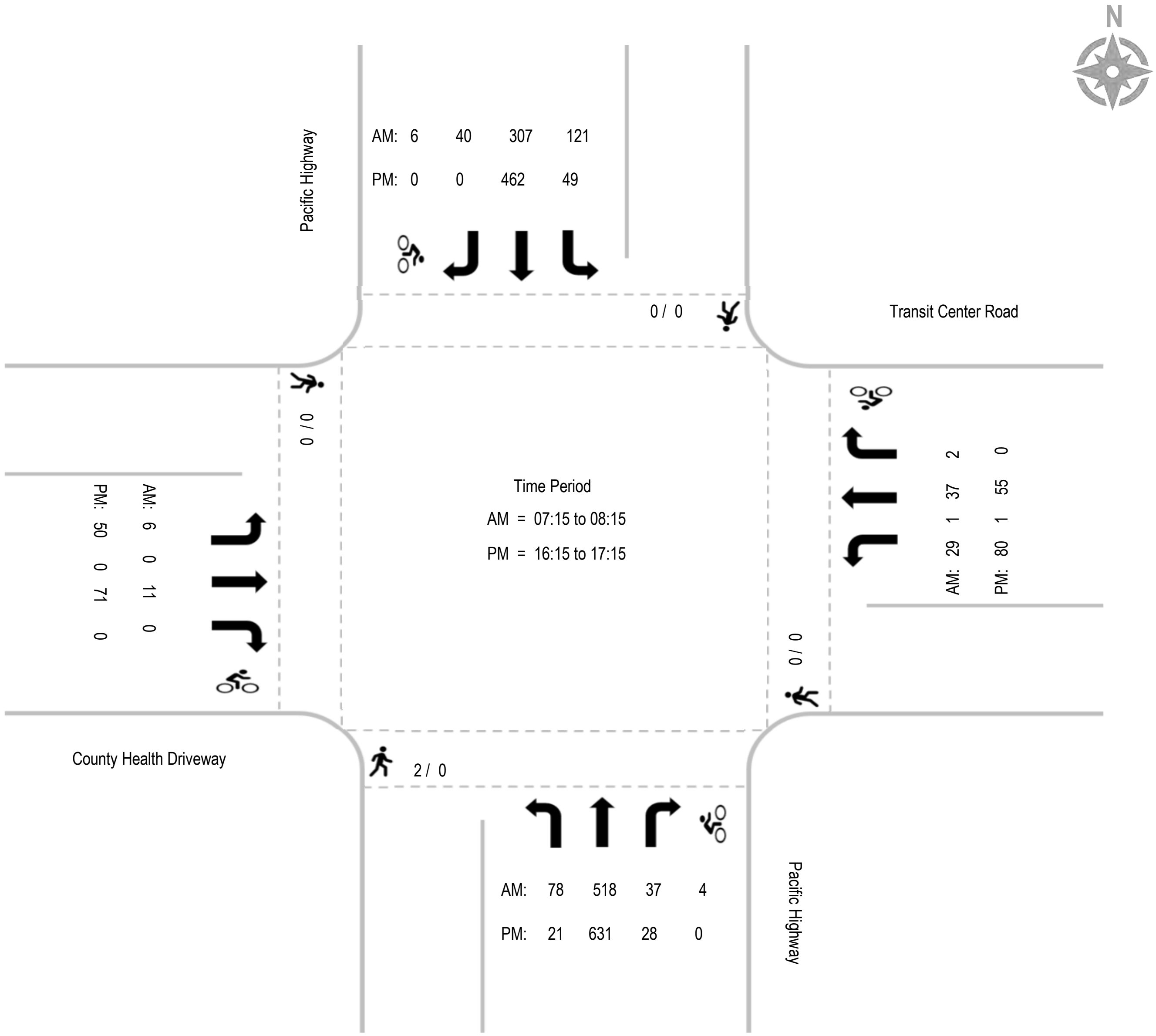
AM	Pacific Highway Southbound				Transit Center Road Westbound				Pacific Highway Northbound				County Health Driveway Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3
7:15	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30	0	1	1	0	0	0	0	0	2	0	1	0	0	0	0	0	2	3
7:45	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Ped Total	0				0				2				0				2	
Bike Total		1	5	0		2	0	0		0	4	0		0	0	0		12

PM	Pacific Highway Southbound				Transit Center Road Westbound				Pacific Highway Northbound				County Health Driveway Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#16R	File Name:	ITM-20-005-16R
Intersection:	Pacific Highway & Old Town Transit Center Bus Access Road	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 | info@yourcountdata.com

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#17	File Name: ITM-20-005-17
Intersection:	Pacific Highway & Kurtz Street	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	Pacific Highway Southbound			- Westbound			Pacific Highway Northbound			Kurtz Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	68	1	0	0	0	56	104	0	0	0	62	291
7:15	0	97	2	0	0	0	63	93	0	0	0	57	312
7:30	0	94	1	0	0	0	65	157	0	0	0	76	393
7:45	0	90	3	0	0	0	98	199	0	0	0	59	449
8:00	0	67	1	0	0	0	116	160	0	1	0	64	409
8:15	0	87	1	0	0	0	101	122	0	1	0	58	370
8:30	0	68	2	0	0	0	81	92	0	0	0	67	310
8:45	0	69	6	0	0	0	81	97	0	0	0	52	305
Total	0	640	17	0	0	0	661	1024	0	2	0	495	2839
Approach%	-	97.4	2.6	-	-	-	39.2	60.8	-	0.4	-	99.6	
Total%	-	22.5	0.6	-	-	-	23.3	36.1	-	0.1	-	17.4	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	338	6	-	-	-	380	638	-	2	-	257	1,621
Approach%	-	98.3	1.7	-	-	-	37.3	62.7	-	0.8	-	99.2	
Total%	-	20.9	0.4	-	-	-	23.4	39.4	-	0.1	-	15.9	
PHF			0.91			#DIV/0!			0.86			0.85	0.90

PM	Pacific Highway Southbound			- Westbound			Pacific Highway Northbound			Kurtz Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	132	1	0	0	0	57	121	0	0	0	113	424
16:15	0	128	4	0	0	0	56	121	0	0	0	120	429
16:30	0	173	1	0	0	0	60	118	0	0	0	122	474
16:45	0	140	4	0	0	0	59	125	0	0	0	114	442
17:00	0	159	2	0	0	0	65	112	0	0	0	120	458
17:15	0	141	3	0	0	0	56	98	0	0	0	102	400
17:30	0	128	3	0	0	0	58	98	0	0	0	124	411
17:45	0	139	0	0	0	0	53	80	0	0	0	116	388
Total	0	1140	18	0	0	0	464	873	0	0	0	931	3426
Approach%	-	98.4	1.6	-	-	-	34.7	65.3	-	-	-	100.0	
Total%	-	33.3	0.5	-	-	-	13.5	25.5	-	-	-	27.2	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	-	600	11	-	-	-	240	476	-	-	-	476	1,803
Approach%	-	98.2	1.8	-	-	-	33.5	66.5	-	-	-	100.0	
Total%	-	33.3	0.6	-	-	-	13.3	26.4	-	-	-	26.4	
PHF			0.88			#DIV/0!			0.97			0.98	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

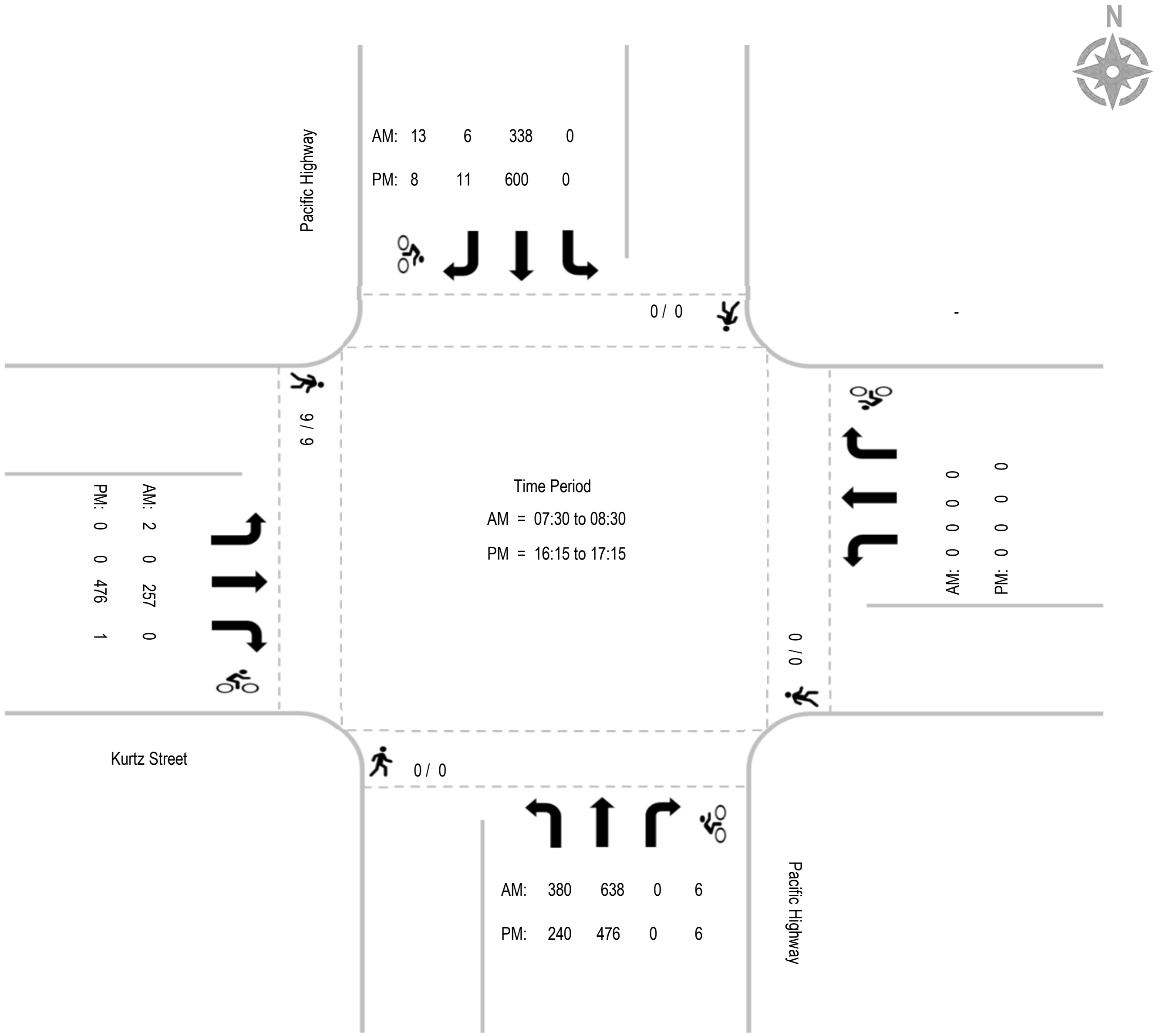
LINSCOTT LAW & GREENSPAN engineers	Location:	#17	File Name:	ITM-20-005-17
	Intersection:	Pacific Highway & Kurtz Street	Project:	LLG Ref. 3-19-3171
	Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Kurtz Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	0	0	0	0	0	0	2	0	3	0	0	0	3	3
7:15	0	0	2	0	0	0	0	0	0	0	1	0	3	0	0	0	3	3
7:30	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
8:15	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	1	3
8:30	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1
Ped Total	0				0				0				9				9	
Bike Total		0	13	0		0	0	0		0	6	0		0	0	0		19

PM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Kurtz Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	0	1	5
16:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
16:30	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0
17:00	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
17:30	0	0	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0	5
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				9				9	
Bike Total		0	8	0		0	0	0		0	6	0		1	0	0		15

Intersection Turning Movement - Peak Hour Summary

Location:	#17	File Name:	ITM-20-005-17
Intersection:	Pacific Highway & Kurtz Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#18R	File Name:	ITM-20-005-18R
Intersection:	Pacific Highway & Sports Arena Boulevard	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway			-			Pacific Highway			Sports Arena Blvd			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	126	7	0	0	0	0	153	0	0	0	6	292
7:15	0	138	4	0	0	0	0	156	0	0	0	10	308
7:30	0	147	9	0	0	0	0	267	0	0	0	5	428
7:45	0	153	10	0	0	0	0	305	0	0	0	8	476
8:00	0	108	19	0	0	0	0	254	0	0	0	10	391
8:15	0	128	10	0	0	0	0	221	0	0	0	8	367
8:30	0	123	6	0	0	0	0	184	0	0	0	8	321
8:45	0	109	16	0	0	0	0	177	0	0	0	14	316
Total	0	1032	81	0	0	0	0	1717	0	0	0	69	2899
Approach%	-	92.7	7.3	-	-	-	-	100.0	-	-	-	100.0	
Total%	-	35.6	2.8	-	-	-	-	59.2	-	-	-	2.4	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	536	48	-	-	-	-	1,047	-	-	-	31	1,662
Approach%	-	91.8	8.2	-	-	-	-	100.0	-	-	-	100.0	
Total%	-	32.3	2.9	-	-	-	-	63.0	-	-	-	1.9	
PHF			0.90			#DIV/0!			0.86			0.78	0.87

PM	Pacific Highway			-			Pacific Highway			Sports Arena Blvd			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	159	5	0	0	0	0	150	0	0	0	37	351
16:15	0	178	3	0	0	0	0	133	0	0	0	24	338
16:30	0	167	9	0	0	0	0	154	0	0	0	28	358
16:45	0	182	1	0	0	0	0	137	0	0	0	32	352
17:00	0	184	1	0	0	0	0	149	0	0	0	31	365
17:15	0	169	1	0	0	0	0	160	0	0	0	16	346
17:30	0	141	0	0	0	0	0	106	0	0	0	12	259
17:45	0	132	1	0	0	0	0	129	0	0	0	14	276
Total	0	1312	21	0	0	0	0	1118	0	0	0	194	2645
Approach%	-	98.4	1.6	-	-	-	-	100.0	-	-	-	100.0	
Total%	-	49.6	0.8	-	-	-	-	42.3	-	-	-	7.3	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	-	702	12	-	-	-	-	600	-	-	-	107	1,421
Approach%	-	98.3	1.7	-	-	-	-	100.0	-	-	-	100.0	
Total%	-	49.4	0.8	-	-	-	-	42.2	-	-	-	7.5	
PHF			0.96			#DIV/0!			0.94			0.84	0.97

Intersection Turning Movement - Bicycle & Pedestrian Count

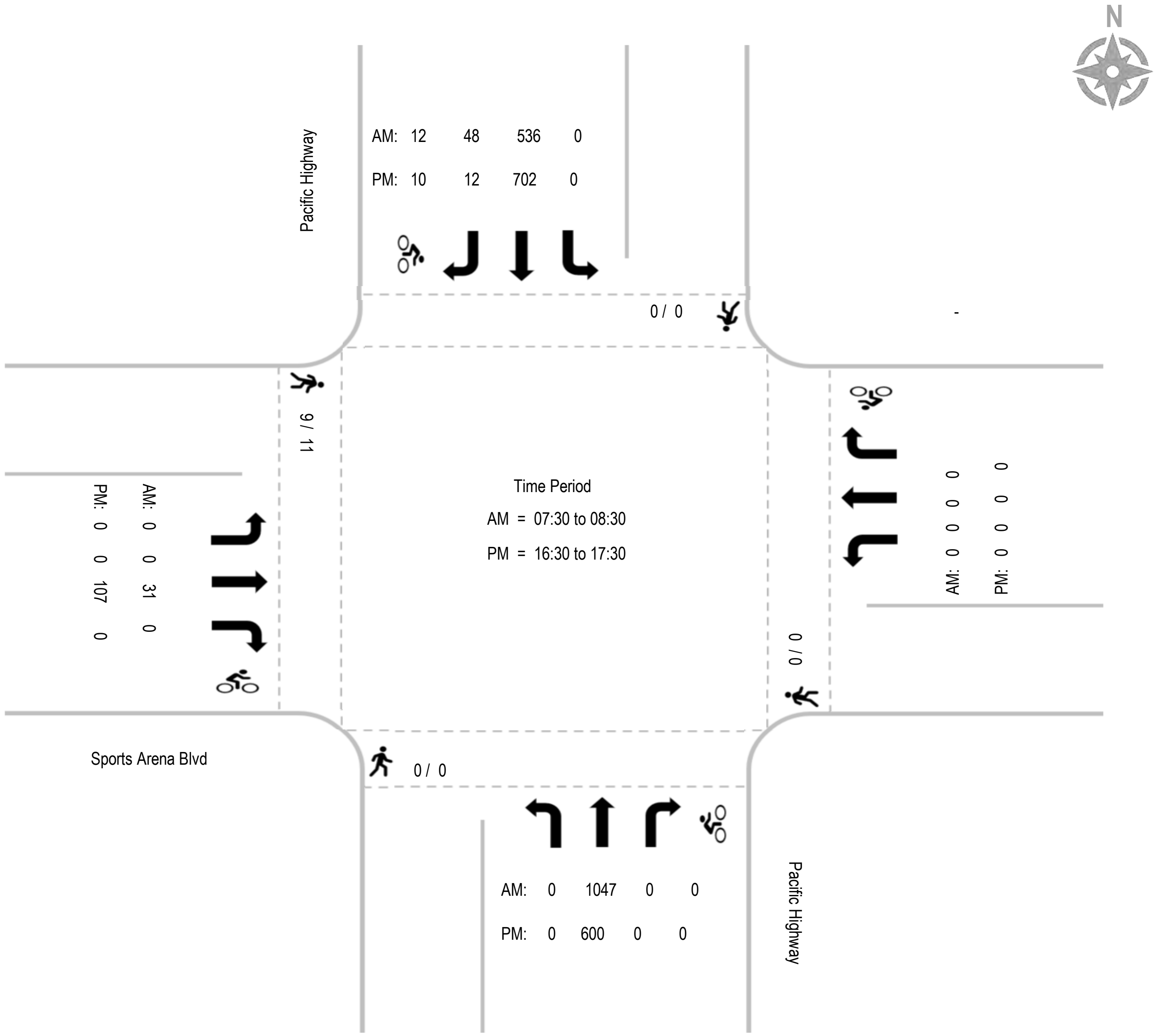
LINSCOTT LAW & GREENSPAN engineers	Location:	#18R	File Name:	ITM-20-005-18R
	Intersection:	Pacific Highway & Sports Arena Boulevard	Project:	LLG Ref. 3-19-3171
	Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Sports Arena Blvd Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
7:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
7:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
8:15	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1
8:30	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
8:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Ped Total	0				0				0				9				9	
Bike Total		0	12	0		0	0	0		0	0	0		0	0	0		12

PM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Sports Arena Blvd Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
16:30	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
16:45	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
17:15	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1
17:30	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Ped Total	0				0				0				11				11	
Bike Total		0	10	0		0	0	0		0	0	0		0	0	0		10

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location:	#18R	File Name:	ITM-20-005-18R
	Intersection:	Pacific Highway & Sports Arena Boulevard	Project:	LLG Ref. 3-19-3171
	Date of Count:	Wednesday, January 22, 2020		Old Town Campus



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Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#20R (Note: Pedestrians are crossing on surface street only)	File Name:	ITM-20-005-20R
Intersection:	Pacific Highway & Enterprise Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway Southbound			Enterprise Street Westbound			Pacific Highway Northbound			Enterprise Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	34	74	26	3	1	1	71	154	73	0	3	1	441
7:15	31	82	40	4	3	1	71	144	83	0	4	1	464
7:30	42	83	29	3	10	2	78	199	74	1	5	2	528
7:45	32	83	48	4	6	3	52	290	77	7	5	3	610
8:00	13	77	28	3	5	1	100	246	66	2	4	4	549
8:15	25	92	26	10	5	1	105	208	39	2	1	6	520
8:30	12	97	20	8	14	2	52	171	36	3	5	3	423
8:45	6	102	23	9	18	0	54	174	40	3	0	1	430
Total	195	690	240	44	62	11	583	1586	488	18	27	21	3965
Approach%	17.3	61.3	21.3	37.6	53.0	9.4	21.9	59.7	18.4	27.3	40.9	31.8	
Total%	4.9	17.4	6.1	1.1	1.6	0.3	14.7	40.0	12.3	0.5	0.7	0.5	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	112	335	131	20	26	7	335	943	256	12	15	15	2,207
Approach%	19.4	58.0	22.7	37.7	49.1	13.2	21.8	61.5	16.7	28.6	35.7	35.7	
Total%	5.1	15.2	5.9	0.9	1.2	0.3	15.2	42.7	11.6	0.5	0.7	0.7	
PHF			0.89			0.83			0.92			0.70	0.90

PM	Pacific Highway Southbound			Enterprise Street Westbound			Pacific Highway Northbound			Enterprise Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	8	252	17	40	16	17	29	129	3	23	2	30	566
16:15	4	260	16	34	18	16	38	131	5	31	7	27	587
16:30	6	268	15	41	12	20	47	120	2	28	0	22	581
16:45	5	294	31	35	14	41	49	103	3	31	2	25	633
17:00	1	295	13	36	10	26	35	122	4	19	4	16	581
17:15	1	247	18	28	3	15	58	136	2	9	2	16	535
17:30	1	254	16	29	10	16	39	119	3	4	0	10	501
17:45	0	255	18	14	6	13	28	105	0	8	0	7	454
Total	26	2125	144	257	89	164	323	965	22	153	17	153	4438
Approach%	1.1	92.6	6.3	50.4	17.5	32.2	24.7	73.7	1.7	47.4	5.3	47.4	
Total%	0.6	47.9	3.2	5.8	2.0	3.7	7.3	21.7	0.5	3.4	0.4	3.4	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	16	1,117	75	146	54	103	169	476	14	109	13	90	2,382
Approach%	1.3	92.5	6.2	48.2	17.8	34.0	25.6	72.2	2.1	51.4	6.1	42.5	
Total%	0.7	46.9	3.1	6.1	2.3	4.3	7.1	20.0	0.6	4.6	0.5	3.8	
PHF			0.92			0.84			0.95			0.82	0.90

Intersection Turning Movement - Bicycle & Pedestrian Count

Location:	#20R (Note: Pedestrians are crossing on surface street only)	File Name:	ITM-20-005-20R
Intersection:	Pacific Highway & Enterprise Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

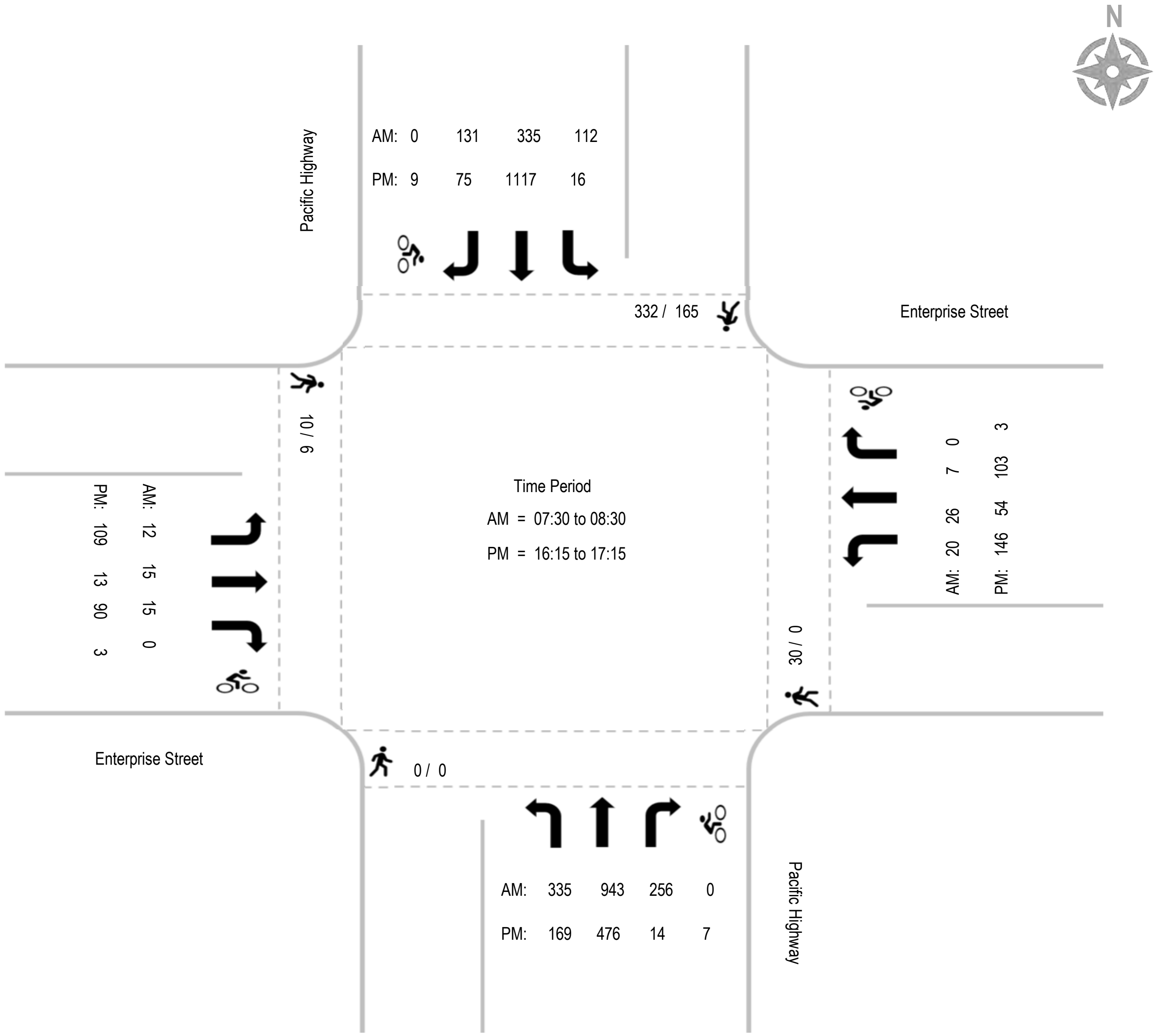
AM	Pacific Highway **Southbound**				Enterprise Street **Westbound**				Pacific Highway **Northbound**				Enterprise Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	40	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	45	0
7:15	35	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	39	0
7:30	39	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	42	0
7:45	45	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	48	0
8:00	52	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	57	0
8:15	36	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	39	0
8:30	51	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	56	0
8:45	34	0	0	0	11	0	0	0	0	0	0	0	1	0	0	0	46	0
Ped Total	332				30				0				10				372	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	Pacific Highway **Southbound**				Enterprise Street **Westbound**				Pacific Highway **Northbound**				Enterprise Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	40	1	2	0	0	0	0	0	0	0	0	0	2	0	0	0	42	3
16:15	23	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	23	3
16:30	27	0	0	2	0	0	2	0	0	0	1	0	1	0	0	0	28	5
16:45	11	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	12	1
17:00	35	0	0	2	0	0	0	0	0	0	3	0	0	0	0	0	35	5
17:15	5	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	6	3
17:30	15	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	15	2
17:45	9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	10	0
Ped Total	165				0				0				6				171	
Bike Total		1	4	4		0	3	0		2	5	0		3	0	0		22

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#20R (Note: Pedestrians are crossing on surface street only)	File Name:	ITM-20-005-20R
Intersection:	Pacific Highway & Enterprise Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



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Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#34	File Name:	ITM-20-005-34
Intersection:	Pacific Highway & Barnett Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus

AM	Pacific Highway Southbound			- Westbound			Pacific Highway Northbound			Barnett Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	67	11	0	0	0	418	298	0	0	0	189	983
7:15	0	76	11	0	0	0	398	298	0	0	0	300	1083
7:30	0	68	20	0	0	0	374	351	0	0	0	329	1142
7:45	0	63	27	0	0	0	420	419	0	0	0	273	1202
8:00	0	69	15	0	0	0	432	412	0	0	0	289	1217
8:15	0	94	14	0	0	0	439	352	0	0	0	277	1176
8:30	0	76	32	0	0	0	389	259	0	0	0	332	1088
8:45	0	90	22	0	0	0	386	268	0	0	0	304	1070
Total	0	603	152	0	0	0	3256	2657	0	0	0	2293	8961
Approach%	-	79.9	20.1	-	-	-	55.1	44.9	-	-	-	100.0	
Total%	-	6.7	1.7	-	-	-	36.3	29.7	-	-	-	25.6	

AM Intersection Peak Hour: **07:30 to 08:30**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	-	294	76	-	-	-	1,665	1,534	-	-	-	1,168	4,737
Approach%	-	79.5	20.5	-	-	-	52.0	48.0	-	-	-	100.0	
Total%	-	6.2	1.6	-	-	-	35.1	32.4	-	-	-	24.7	
PHF			0.86			#DIV/0!			0.95			0.89	0.92

PM	Pacific Highway Southbound			- Westbound			Pacific Highway Northbound			Barnett Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	292	30	0	0	0	374	161	0	0	0	471	1328
16:15	0	292	29	0	0	0	372	174	0	0	0	469	1336
16:30	0	302	29	0	0	0	380	169	0	0	0	415	1295
16:45	0	315	39	0	0	0	378	155	0	0	0	485	1372
17:00	0	310	37	0	0	0	379	161	0	0	0	464	1351
17:15	0	268	23	0	0	0	402	196	0	0	0	455	1344
17:30	0	270	23	0	0	0	366	161	0	0	0	421	1241
17:45	0	240	36	0	0	0	300	133	0	0	0	421	1130
Total	0	2289	246	0	0	0	2951	1310	0	0	0	3601	10397
Approach%	-	90.3	9.7	-	-	-	69.3	30.7	-	-	-	100.0	
Total%	-	22.0	2.4	-	-	-	28.4	12.6	-	-	-	34.6	

PM Intersection Peak Hour: **16:30 to 17:30**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	-	1,195	128	-	-	-	1,539	681	-	-	-	1,819	5,362
Approach%	-	90.3	9.7	-	-	-	69.3	30.7	-	-	-	100.0	
Total%	-	22.3	2.4	-	-	-	28.7	12.7	-	-	-	33.9	
PHF			0.93			#DIV/0!			0.93			0.94	0.90

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

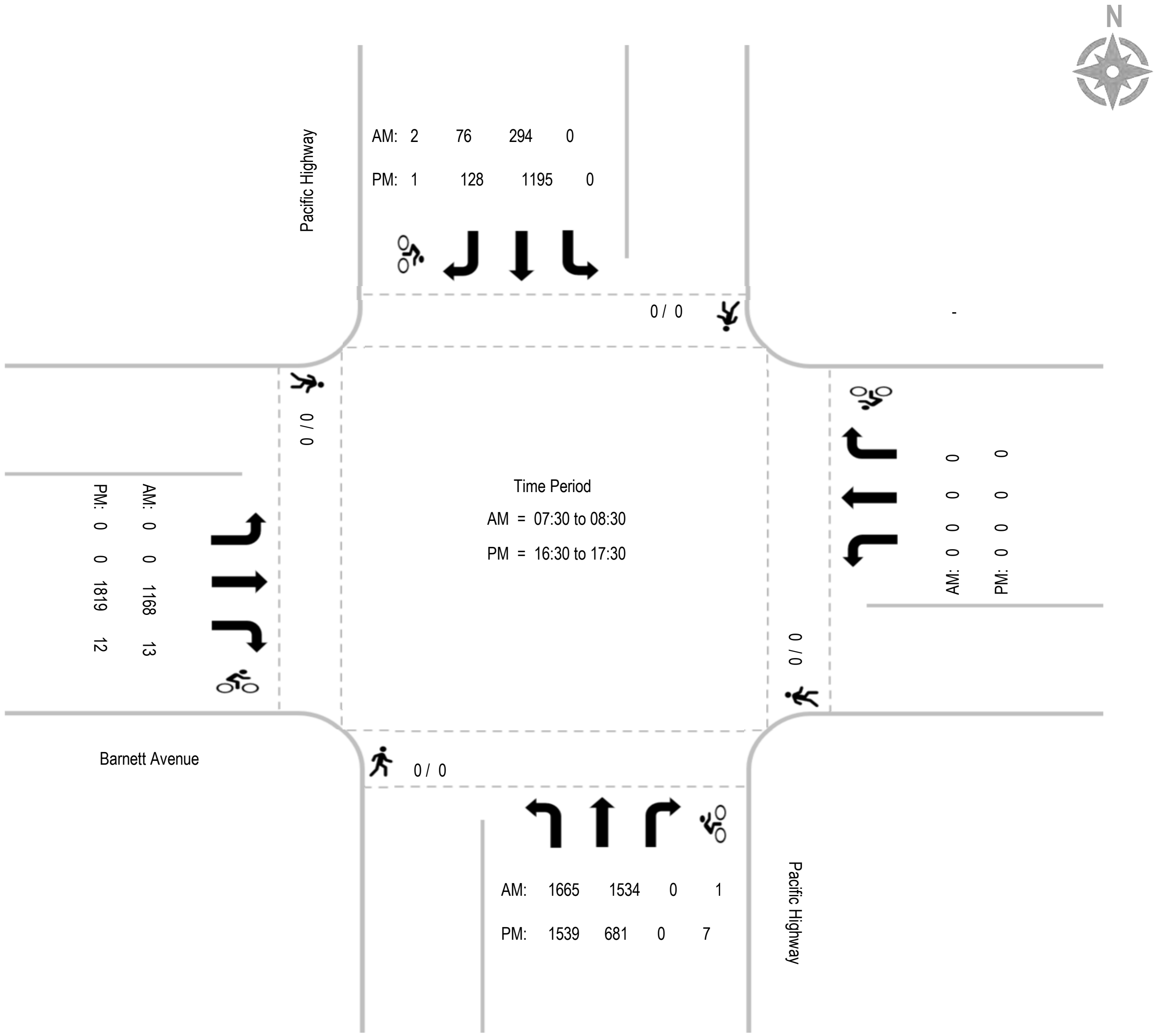
Location:	#34	File Name:	ITM-20-005-34
Intersection:	Pacific Highway & Barnett Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus

AM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Barnett Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
7:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	3
7:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	3
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Ped Total	0				0				0				0				0	
Bike Total		0	0	2		0	0	0		1	0	0		0	3	10		16

PM	Pacific Highway Southbound				- Westbound				Pacific Highway Northbound				Barnett Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
16:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3
16:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
16:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3
17:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:30	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	1	0	5
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Ped Total	0				0				0				0				0	
Bike Total		0	0	1		0	0	0		7	0	0		0	0	12		20

Intersection Turning Movement - Peak Hour Summary

Location:	#34	File Name:	ITM-20-005-34
Intersection:	Pacific Highway & Barnett Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 30, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers	Location:	#26	File Name:	ITM-20-005-26
	Intersection:	San Diego Avenue & Old Town Avenue	Project:	LLG Ref. 3-19-3171
	Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	San Diego Avenue **Southbound**			Old Town Avenue **Westbound**			San Diego Avenue **Northbound**			Old Town Avenue **Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	6	10	1	8	0	24	7	1	4	4	15	80
7:15	0	13	8	2	5	1	24	17	1	23	2	34	130
7:30	0	6	16	0	5	1	53	24	3	34	8	28	178
7:45	0	10	17	1	11	1	68	49	0	38	12	58	265
8:00	1	8	15	0	2	1	60	32	1	47	14	24	205
8:15	1	10	15	0	4	2	26	24	2	44	20	20	168
8:30	1	5	26	0	3	3	23	19	3	32	14	14	143
8:45	3	15	19	1	12	2	25	22	3	23	20	23	168
Total	6	73	126	5	50	11	303	194	14	245	94	216	1337
Approach%	2.9	35.6	61.5	7.6	75.8	16.7	59.3	38.0	2.7	44.1	16.9	38.9	
Total%	0.4	5.5	9.4	0.4	3.7	0.8	22.7	14.5	1.0	18.3	7.0	16.2	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	2	34	63	1	22	5	207	129	6	163	54	130	816
Approach%	2.0	34.3	63.6	3.6	78.6	17.9	60.5	37.7	1.8	47.0	15.6	37.5	
Total%	0.2	4.2	7.7	0.1	2.7	0.6	25.4	15.8	0.7	20.0	6.6	15.9	
PHF			0.92			0.54			0.73			0.80	0.77

PM	San Diego Avenue **Southbound**			Old Town Avenue **Westbound**			San Diego Avenue **Northbound**			Old Town Avenue **Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	3	17	33	0	13	6	23	44	1	78	7	24	249
16:15	1	15	40	0	6	5	33	50	1	63	8	34	256
16:30	1	14	52	1	13	8	21	33	2	72	8	31	256
16:45	0	13	47	0	18	5	29	36	1	61	4	33	247
17:00	4	23	42	4	26	5	27	30	0	69	9	32	271
17:15	2	19	29	1	17	4	15	39	0	81	10	24	241
17:30	1	22	30	1	15	7	20	33	0	73	7	26	235
17:45	3	15	31	0	17	2	24	27	0	68	7	19	213
Total	15	138	304	7	125	42	192	292	5	565	60	223	1968
Approach%	3.3	30.2	66.5	4.0	71.8	24.1	39.3	59.7	1.0	66.6	7.1	26.3	
Total%	0.8	7.0	15.4	0.4	6.4	2.1	9.8	14.8	0.3	28.7	3.0	11.3	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	6	65	181	5	63	23	110	149	4	265	29	130	1,030
Approach%	2.4	25.8	71.8	5.5	69.2	25.3	41.8	56.7	1.5	62.5	6.8	30.7	
Total%	0.6	6.3	17.6	0.5	6.1	2.2	10.7	14.5	0.4	25.7	2.8	12.6	
PHF			0.91			0.65			0.78			0.95	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

Location:	#26	File Name: ITM-20-005-26
Intersection:	San Diego Avenue & Old Town Avenue	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

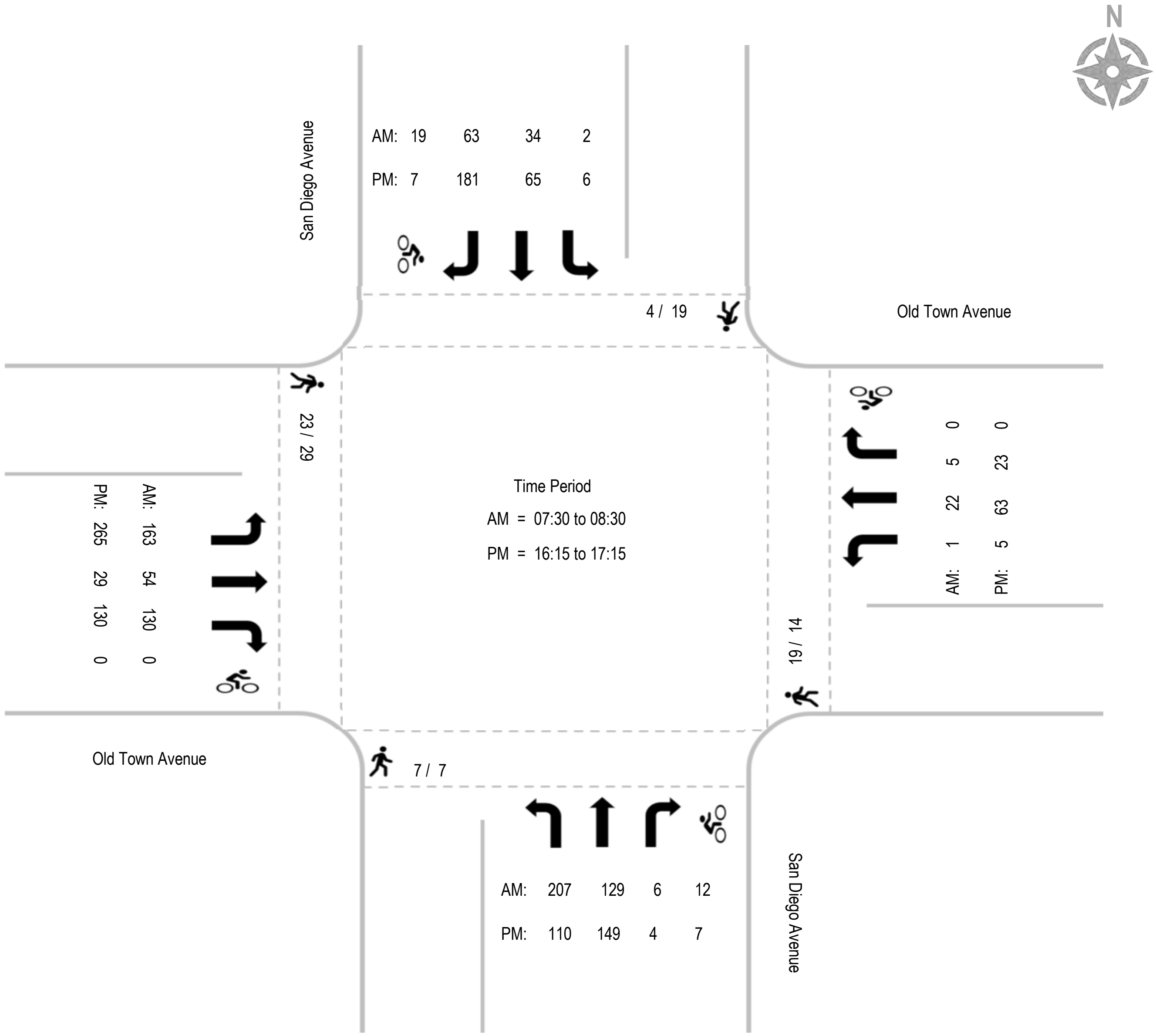
AM	San Diego Avenue Southbound				Old Town Avenue Westbound				San Diego Avenue Northbound				Old Town Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	2	0	3	0	0	0	0	0	1	0	2	0	0	0	5	3
7:15	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0	0	2	2
7:30	0	0	0	0	4	0	0	0	1	0	4	0	1	0	0	0	6	4
7:45	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0
8:00	0	0	0	0	2	0	0	0	3	0	0	0	3	0	0	0	8	0
8:15	1	0	1	1	4	0	0	0	1	0	2	0	4	0	0	0	10	4
8:30	1	0	2	0	2	0	0	0	2	0	1	0	4	0	0	0	9	3
8:45	2	0	1	11	1	0	0	0	0	0	3	0	8	0	0	0	11	15
Ped Total	4				19				7				23				53	
Bike Total		0	7	12		0	0	0		0	12	0		0	0	0		31

PM	San Diego Avenue Southbound				Old Town Avenue Westbound				San Diego Avenue Northbound				Old Town Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
16:15	0	0	1	1	3	0	0	0	1	0	1	0	5	0	0	0	9	3
16:30	2	0	0	0	2	0	0	0	3	0	3	0	4	0	0	0	11	3
16:45	2	0	3	0	3	0	0	0	0	1	0	0	2	0	0	0	7	4
17:00	0	0	0	0	0	0	0	0	2	0	1	0	2	0	0	0	4	1
17:15	10	0	2	0	1	0	0	0	1	0	0	0	1	0	0	0	13	2
17:30	5	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	11	0
17:45	0	0	0	0	4	0	0	0	0	0	1	0	6	0	0	0	10	1
Ped Total	19				14				7				29				69	
Bike Total		0	6	1		0	0	0		1	6	0		0	0	0		14

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#26	File Name:	ITM-20-005-26
Intersection:	San Diego Avenue & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#25	File Name:	ITM-20-005-25
Intersection:	Moore Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Moore Street Southbound			Old Town Avenue Westbound			Moore Street Northbound			Old Town Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	3	0	20	28	5	18	34	17	40	4	169
7:15	0	0	2	0	24	24	9	29	28	12	47	4	179
7:30	0	0	2	0	36	48	4	58	49	21	54	9	281
7:45	0	0	1	0	45	56	8	82	58	23	92	7	372
8:00	0	0	2	0	44	45	7	45	61	30	64	3	301
8:15	0	0	3	0	22	19	6	15	43	23	103	11	245
8:30	0	0	4	0	36	23	12	17	37	35	59	8	231
8:45	0	0	0	0	30	31	8	32	38	34	81	9	263
Total	0	0	17	0	257	274	59	296	348	195	540	55	2041
Approach%	-	-	100.0	-	48.4	51.6	8.4	42.1	49.5	24.7	68.4	7.0	
Total%	-	-	0.8	-	12.6	13.4	2.9	14.5	17.1	9.6	26.5	2.7	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	-	8	-	147	168	25	200	211	97	313	30	1,199
Approach%	-	-	100.0	-	46.7	53.3	5.7	45.9	48.4	22.0	71.1	6.8	
Total%	-	-	0.7	-	12.3	14.0	2.1	16.7	17.6	8.1	26.1	2.5	
PHF			0.67			0.78			0.74			0.80	0.81

PM	Moore Street Southbound			Old Town Avenue Westbound			Moore Street Northbound			Old Town Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	1	0	4	0	50	33	17	25	53	112	76	2	373
16:15	0	1	0	0	71	31	8	23	34	88	82	8	346
16:30	0	0	8	0	69	29	9	20	31	73	88	7	334
16:45	0	2	2	0	79	32	12	20	53	76	72	7	355
17:00	2	0	2	0	76	41	14	32	55	83	72	7	384
17:15	0	0	3	0	46	25	15	26	49	67	80	5	316
17:30	1	0	6	0	44	40	17	23	58	78	70	6	343
17:45	0	0	3	1	43	30	11	16	47	56	69	5	281
Total	4	3	28	1	478	261	103	185	380	633	609	47	2732
Approach%	11.4	8.6	80.0	0.1	64.6	35.3	15.4	27.7	56.9	49.1	47.2	3.6	
Total%	0.1	0.1	1.0	0.0	17.5	9.6	3.8	6.8	13.9	23.2	22.3	1.7	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	2	3	12	-	295	133	43	95	173	320	314	29	1,419
Approach%	11.8	17.6	70.6	-	68.9	31.1	13.8	30.5	55.6	48.3	47.4	4.4	
Total%	0.1	0.2	0.8	-	20.8	9.4	3.0	6.7	12.2	22.6	22.1	2.0	
PHF			0.53			0.91			0.77			0.93	0.92

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#25	File Name:	ITM-20-005-25
Intersection:	Moore Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

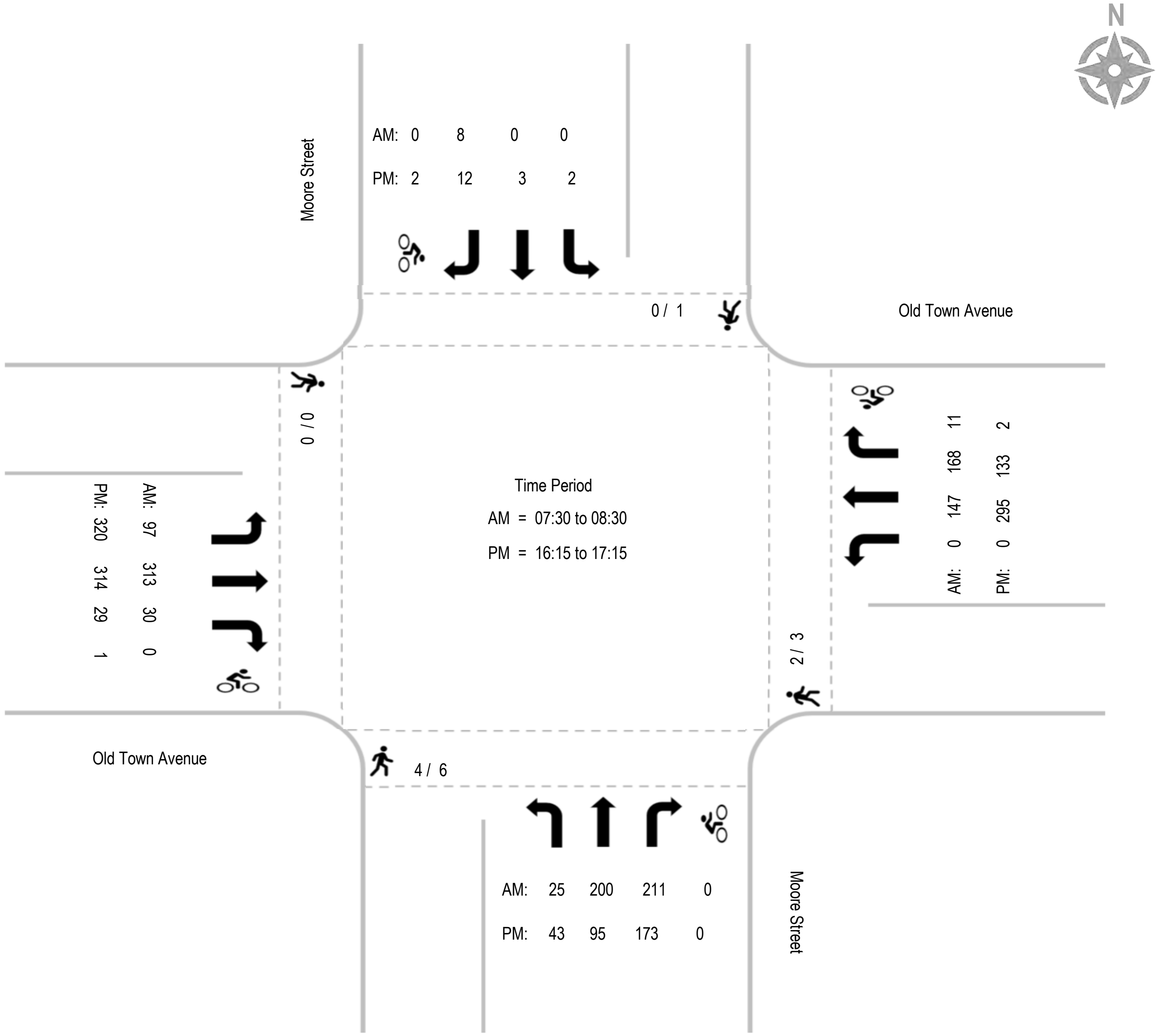
AM	Moore Street Southbound				Old Town Avenue Westbound				Moore Street Northbound				Old Town Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
8:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11
Ped Total	0				2				4				0				6	
Bike Total		0	0	0		0	11	0		0	0	0		0	0	0		11

PM	Moore Street Southbound				Old Town Avenue Westbound				Moore Street Northbound				Old Town Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
16:15	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	2	1
16:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
16:45	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	2	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1
17:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	1				3				6				0				10	
Bike Total		0	0	2		0	2	0		0	0	0		0	1	0		5

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#25	File Name:	ITM-20-005-25
Intersection:	Moore Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#24	File Name:	ITM-20-005-24
Intersection:	I-5 SB Off Ramp & Hancock Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	I-5 SB Off Ramp Southbound			Old Town Avenue Westbound			Hancock Street Northbound			- Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	42	134	0	13	0	0	0	0	19	0	0	0	208
7:15	53	147	0	15	0	0	0	0	16	0	0	0	231
7:30	62	141	0	12	0	0	0	0	21	0	0	0	236
7:45	102	163	0	11	0	0	0	0	22	0	0	0	298
8:00	69	130	0	11	0	0	0	0	25	0	0	0	235
8:15	107	86	0	13	0	0	0	0	20	0	0	0	226
8:30	72	75	0	16	0	0	0	0	36	0	0	0	199
8:45	97	100	0	14	0	0	0	0	30	0	0	0	241
Total	604	976	0	105	0	0	0	0	189	0	0	0	1874
Approach%	38.2	61.8	-	100.0	-	-	-	-	100.0	-	-	-	
Total%	32.2	52.1	-	5.6	-	-	-	-	10.1	-	-	-	

AM Intersection Peak Hour: **07:15 to 08:15**

Volume	286	581	-	49	-	-	-	-	84	-	-	-	1,000
Approach%	33.0	67.0	-	100.0	-	-	-	-	100.0	-	-	-	
Total%	28.6	58.1	-	4.9	-	-	-	-	8.4	-	-	-	
PHF			0.82			0.82			0.84			#DIV/0!	0.84

PM	I-5 SB Off Ramp Southbound			Old Town Avenue Westbound			Hancock Street Northbound			- Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	78	62	0	24	0	0	0	0	112	0	0	0	276
16:15	86	56	0	29	0	0	0	0	83	0	0	0	254
16:30	82	59	0	18	0	0	0	0	88	0	0	0	247
16:45	75	50	0	26	0	0	0	0	77	0	0	0	228
17:00	76	58	0	39	0	0	0	0	85	0	0	0	258
17:15	82	67	0	20	0	0	0	0	75	0	0	0	244
17:30	83	58	0	19	0	0	0	0	66	0	0	0	226
17:45	97	62	0	34	0	0	0	0	88	0	0	0	281
Total	659	472	0	209	0	0	0	0	674	0	0	0	2014
Approach%	58.3	41.7	-	100.0	-	-	-	-	100.0	-	-	-	
Total%	32.7	23.4	-	10.4	-	-	-	-	33.5	-	-	-	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	338	245	-	112	-	-	-	-	314	-	-	-	1,009
Approach%	58.0	42.0	-	100.0	-	-	-	-	100.0	-	-	-	
Total%	33.5	24.3	-	11.1	-	-	-	-	31.1	-	-	-	
PHF			0.92			0.72			0.89			#DIV/0!	0.90

Intersection Turning Movement - Bicycle & Pedestrian Count

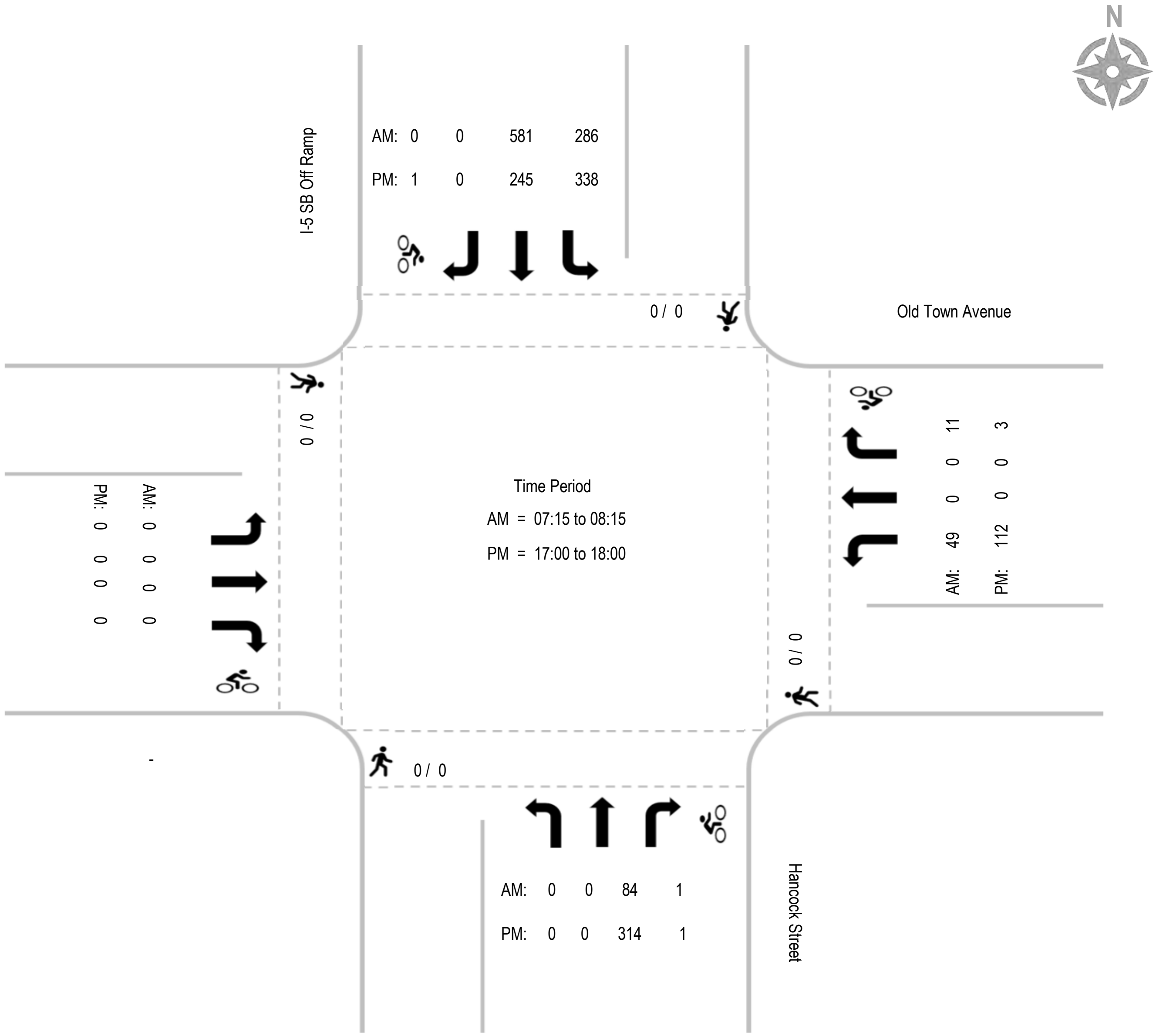
Location:	#24	File Name:	ITM-20-005-24
Intersection:	I-5 SB Off Ramp & Hancock Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	I-5 SB Off Ramp **Southbound**				Old Town Avenue **Westbound**				Hancock Street **Northbound**				- **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	11
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		11	0	0		0	0	1		0	0	0		12

PM	I-5 SB Off Ramp **Southbound**				Old Town Avenue **Westbound**				Hancock Street **Northbound**				- **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		1	0	0		3	0	0		0	0	1		0	0	0		5

Intersection Turning Movement - Peak Hour Summary

Location:	#24	File Name:	ITM-20-005-24
Intersection:	I-5 SB Off Ramp & Hancock Street & Old Town Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#23	File Name:	ITM-20-005-23
Intersection:	Witherby Street & Hancock Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

AM	Hancock Street Southbound			Witherby Street Westbound			Hancock Street Northbound			Witherby Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	1	15	120	0	1	0	4	7	0	17	0	6	171
7:15	2	25	147	1	0	1	3	5	0	13	0	13	210
7:30	1	33	117	0	0	0	2	6	1	28	0	14	202
7:45	0	51	134	0	0	0	6	5	0	14	0	25	235
8:00	1	38	97	0	1	1	1	8	0	17	1	13	178
8:15	1	27	83	0	0	0	2	10	0	19	0	13	155
8:30	2	36	78	1	0	0	10	12	2	28	0	8	177
8:45	1	39	76	1	1	0	3	6	0	14	0	13	154
Total	9	264	852	3	3	2	31	59	3	150	1	105	1482
Approach%	0.8	23.5	75.7	37.5	37.5	25.0	33.3	63.4	3.2	58.6	0.4	41.0	
Total%	0.6	17.8	57.5	0.2	0.2	0.1	2.1	4.0	0.2	10.1	0.1	7.1	

AM Intersection Peak Hour: **07:15 to 08:15**

Volume	4	147	495	1	1	2	12	24	1	72	1	65	825
Approach%	0.6	22.8	76.6	25.0	25.0	50.0	32.4	64.9	2.7	52.2	0.7	47.1	
Total%	0.5	17.8	60.0	0.1	0.1	0.2	1.5	2.9	0.1	8.7	0.1	7.9	
PHF			0.87			0.50			0.84			0.82	0.88

PM	Hancock Street Southbound			Witherby Street Westbound			Hancock Street Northbound			Witherby Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	3	48	52	3	1	2	8	15	2	83	1	34	252
16:15	0	59	54	4	0	1	6	15	11	89	1	29	269
16:30	3	48	59	3	1	0	8	12	4	105	0	25	268
16:45	1	39	47	0	2	1	8	12	2	90	1	31	234
17:00	0	44	56	0	1	0	4	15	1	83	1	24	229
17:15	2	56	58	3	3	3	5	4	3	65	3	20	225
17:30	4	60	48	3	0	4	7	14	3	37	1	19	200
17:45	1	43	56	1	0	1	3	18	1	45	0	12	181
Total	14	397	430	17	8	12	49	105	27	597	8	194	1858
Approach%	1.7	47.2	51.1	45.9	21.6	32.4	27.1	58.0	14.9	74.7	1.0	24.3	
Total%	0.8	21.4	23.1	0.9	0.4	0.6	2.6	5.7	1.5	32.1	0.4	10.4	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	7	194	212	10	4	4	30	54	19	367	3	119	1,023
Approach%	1.7	47.0	51.3	55.6	22.2	22.2	29.1	52.4	18.4	75.1	0.6	24.3	
Total%	0.7	19.0	20.7	1.0	0.4	0.4	2.9	5.3	1.9	35.9	0.3	11.6	
PHF			0.91			0.75			0.80			0.94	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#23	File Name:	ITM-20-005-23
Intersection:	Witherby Street & Hancock Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus

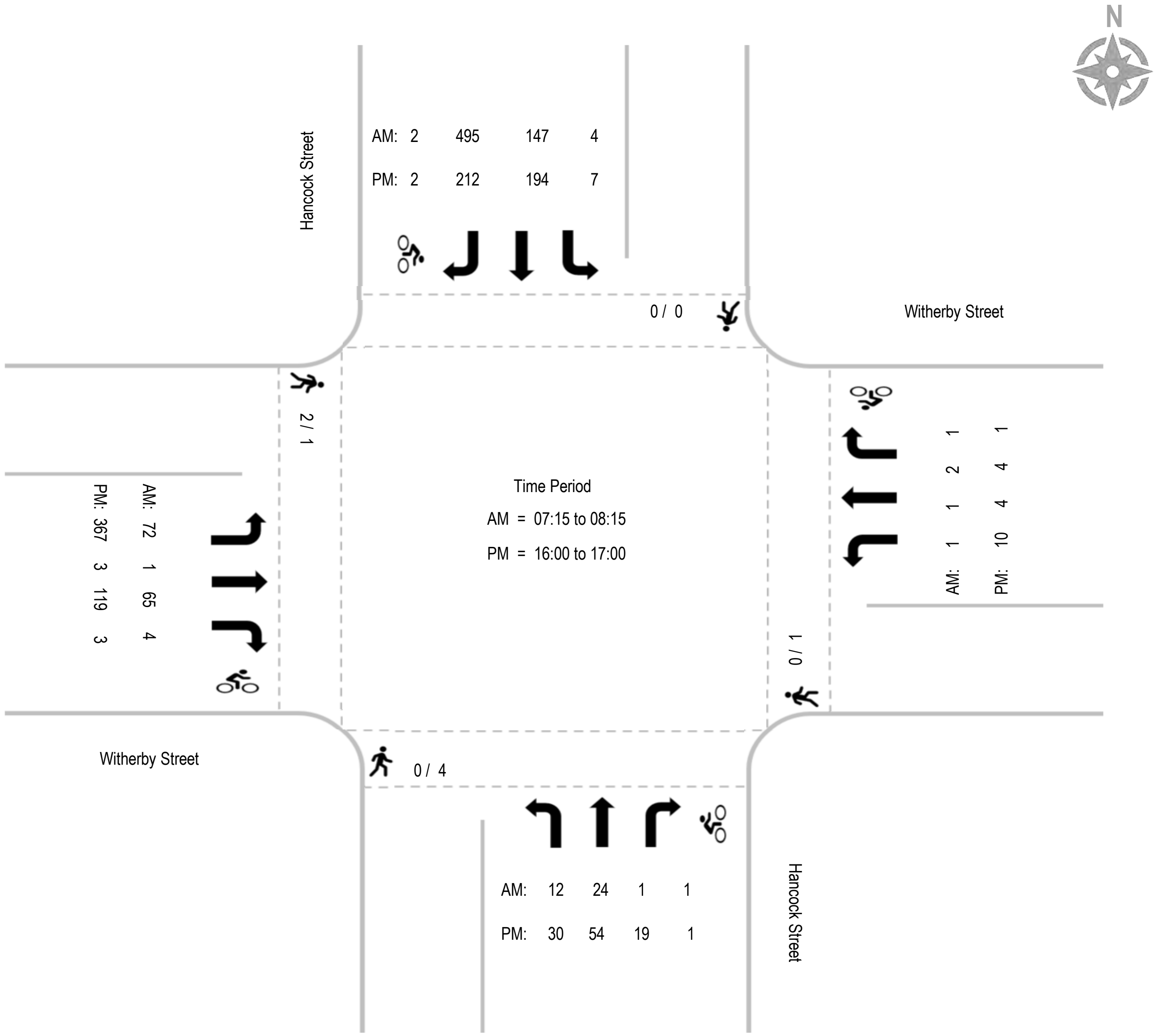
AM	Hancock Street Southbound				Witherby Street Westbound				Hancock Street Northbound				Witherby Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:15	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	3
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	2
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				2				2	
Bike Total		0	1	1		1	0	0		1	0	0		2	2	0		8

PM	Hancock Street Southbound				Witherby Street Westbound				Hancock Street Northbound				Witherby Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
16:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	1
16:30	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	1	4
16:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
17:45	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Ped Total	0				1				4				1				6	
Bike Total		0	1	1		1	0	0		0	0	1		1	0	2		7

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#23	File Name:	ITM-20-005-23
Intersection:	Witherby Street & Hancock Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Thursday, January 23, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#22	File Name:	ITM-20-005-22
Intersection:	Pacific Highway NB & Witherby Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Hwy NB Ramps Southbound			Witherby Street Westbound			- Northbound			Witherby Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	4	0	30	0	64	65	0	0	0	16	18	0	197
7:15	9	0	24	0	55	72	0	0	0	15	17	0	192
7:30	8	0	20	0	43	80	0	0	0	20	21	0	192
7:45	7	0	16	0	38	67	0	0	0	20	29	0	177
8:00	8	0	15	0	37	72	0	0	0	9	24	0	165
8:15	7	0	20	0	29	54	0	0	0	12	23	0	145
8:30	1	0	15	0	31	38	0	0	0	9	25	0	119
8:45	10	0	12	0	27	46	0	0	0	12	20	0	127
Total	54	0	152	0	324	494	0	0	0	113	177	0	1314
Approach%	26.2	-	73.8	-	39.6	60.4	-	-	-	39.0	61.0	-	
Total%	4.1	-	11.6	-	24.7	37.6	-	-	-	8.6	13.5	-	

AM Intersection Peak Hour: **07:00 to 08:00**

Volume	28	-	90	-	200	284	-	-	-	71	85	-	758
Approach%	23.7	-	76.3	-	41.3	58.7	-	-	-	45.5	54.5	-	
Total%	3.7	-	11.9	-	26.4	37.5	-	-	-	9.4	11.2	-	
PHF			0.87			0.94			#DIV/0!			0.80	0.96

PM	Pacific Hwy NB Ramps Southbound			Witherby Street Westbound			- Northbound			Witherby Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	12	0	10	0	22	19	0	0	0	39	105	0	207
16:15	10	0	9	0	10	30	0	0	0	30	84	0	173
16:30	13	0	14	0	14	16	0	0	0	30	78	0	165
16:45	6	0	8	0	12	19	0	0	0	14	77	0	136
17:00	10	0	9	0	29	22	0	0	0	25	78	0	173
17:15	9	0	4	0	20	16	0	0	0	30	75	0	154
17:30	5	0	3	0	15	24	0	0	0	20	54	0	121
17:45	14	0	5	0	15	22	0	0	0	10	52	0	118
Total	79	0	62	0	137	168	0	0	0	198	603	0	1247
Approach%	56.0	-	44.0	-	44.9	55.1	-	-	-	24.7	75.3	-	
Total%	6.3	-	5.0	-	11.0	13.5	-	-	-	15.9	48.4	-	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	41	-	41	-	58	84	-	-	-	113	344	-	681
Approach%	50.0	-	50.0	-	40.8	59.2	-	-	-	24.7	75.3	-	
Total%	6.0	-	6.0	-	8.5	12.3	-	-	-	16.6	50.5	-	
PHF			0.76			0.87			#DIV/0!			0.79	0.82

Intersection Turning Movement - Bicycle & Pedestrian Count

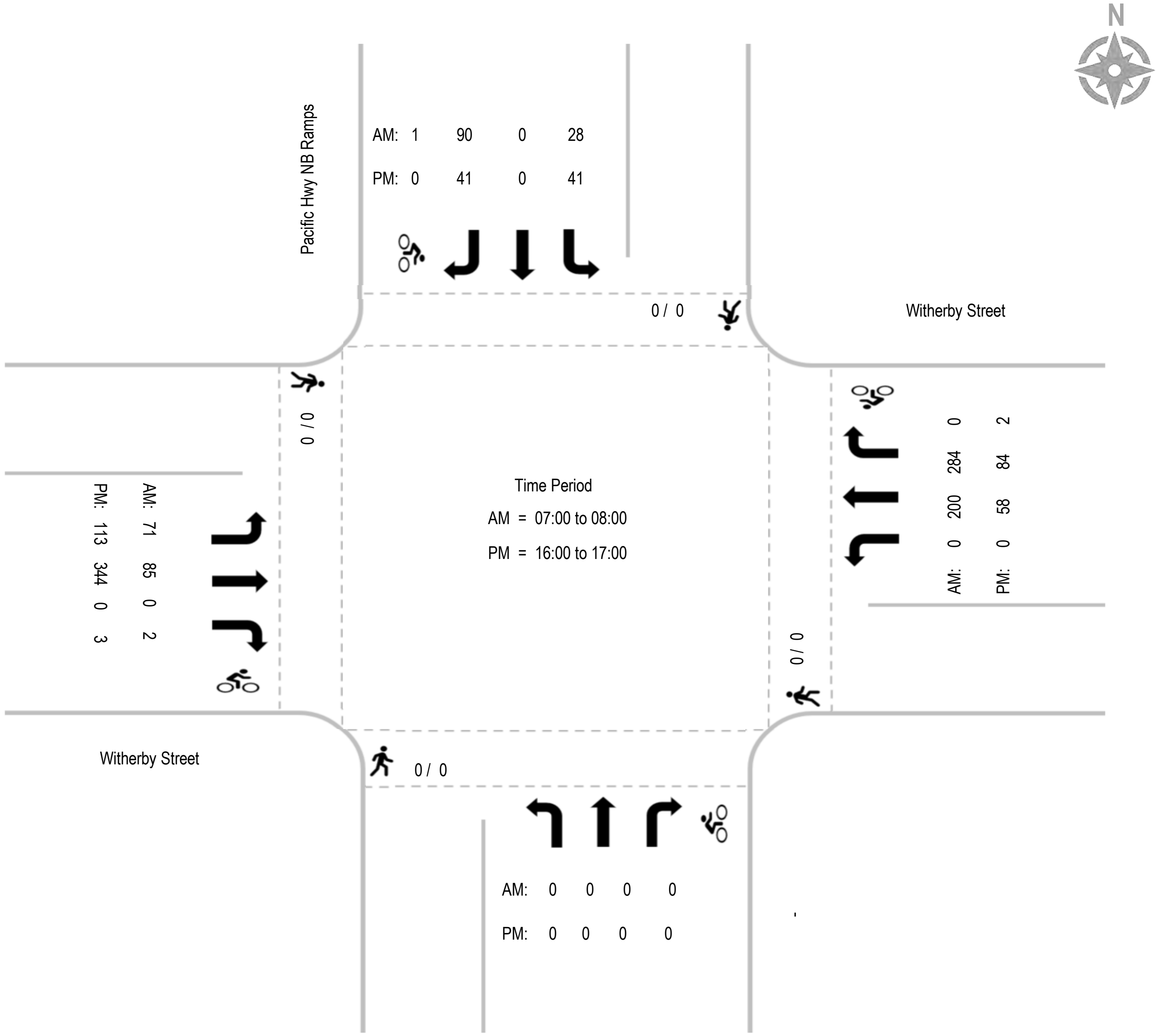
LINSCOTT LAW & GREENSPAN engineers			
Location:	#22	File Name:	ITM-20-005-22
Intersection:	Pacific Highway NB & Witherby Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Hwy NB Ramps Southbound				Witherby Street Westbound				- Northbound				Witherby Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ped Total	0				0				0				0				0	
Bike Total		1	0	0		0	0	0		0	0	0		1	1	0		3

PM	Pacific Hwy NB Ramps Southbound				Witherby Street Westbound				- Northbound				Witherby Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
16:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	2	0		0	0	0		2	1	0		5

Intersection Turning Movement - Peak Hour Summary

Location:	#22	File Name:	ITM-20-005-22
Intersection:	Pacific Highway NB & Witherby Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#21	File Name: ITM-20-005-21
Intersection:	Witherby Street & Tripoli Avenue	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	Marine Corps Depot Southbound			Pacific Hwy Off Ramp Westbound			Witherby Street Northbound			Tripoli Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	16	9	0	25	0	4	93	0	0	0	19	166
7:15	0	8	4	0	27	0	4	76	0	3	0	25	147
7:30	0	18	6	0	30	0	3	59	0	0	0	23	139
7:45	0	15	6	0	33	0	4	53	0	0	0	30	141
8:00	0	13	6	3	21	0	5	49	0	0	0	19	116
8:15	0	10	6	1	12	0	4	43	0	0	0	24	100
8:30	0	12	6	0	16	0	4	31	0	1	0	21	91
8:45	0	18	4	1	34	0	3	37	0	0	0	16	113
Total	0	110	47	5	198	0	31	441	0	4	0	177	1013
Approach%	-	70.1	29.9	2.5	97.5	-	6.6	93.4	-	2.2	-	97.8	
Total%	-	10.9	4.6	0.5	19.5	-	3.1	43.5	-	0.4	-	17.5	

AM Intersection Peak Hour: **07:00 to 08:00**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	-	57	25	-	115	-	15	281	-	3	-	97	593
Approach%	-	69.5	30.5	-	100.0	-	5.1	94.9	-	3.0	-	97.0	
Total%	-	9.6	4.2	-	19.4	-	2.5	47.4	-	0.5	-	16.4	
PHF			0.82			0.87			0.76			0.83	0.89

PM	Marine Corps Depot Southbound			Pacific Hwy Off Ramp Westbound			Witherby Street Northbound			Tripoli Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	91	34	3	26	0	9	25	0	1	0	52	241
16:15	0	64	34	4	37	0	5	14	0	1	0	48	207
16:30	0	62	29	2	23	0	6	22	0	1	0	40	185
16:45	0	46	31	5	23	0	5	14	0	2	0	47	173
17:00	0	66	33	4	19	0	18	16	0	0	0	38	194
17:15	0	58	27	1	11	0	13	10	0	0	0	44	164
17:30	0	35	22	1	14	0	14	3	0	0	0	34	123
17:45	0	23	23	9	15	0	9	8	0	0	0	35	122
Total	0	445	233	29	168	0	79	112	0	5	0	338	1409
Approach%	-	65.6	34.4	14.7	85.3	-	41.4	58.6	-	1.5	-	98.5	
Total%	-	31.6	16.5	2.1	11.9	-	5.6	7.9	-	0.4	-	24.0	

PM Intersection Peak Hour: **16:00 to 17:00**

	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Volume	-	263	128	14	109	-	25	75	-	5	-	187	806
Approach%	-	67.3	32.7	11.4	88.6	-	25.0	75.0	-	2.6	-	97.4	
Total%	-	32.6	15.9	1.7	13.5	-	3.1	9.3	-	0.6	-	23.2	
PHF			0.78			0.75			0.74			0.91	0.84

Intersection Turning Movement - Bicycle & Pedestrian Count

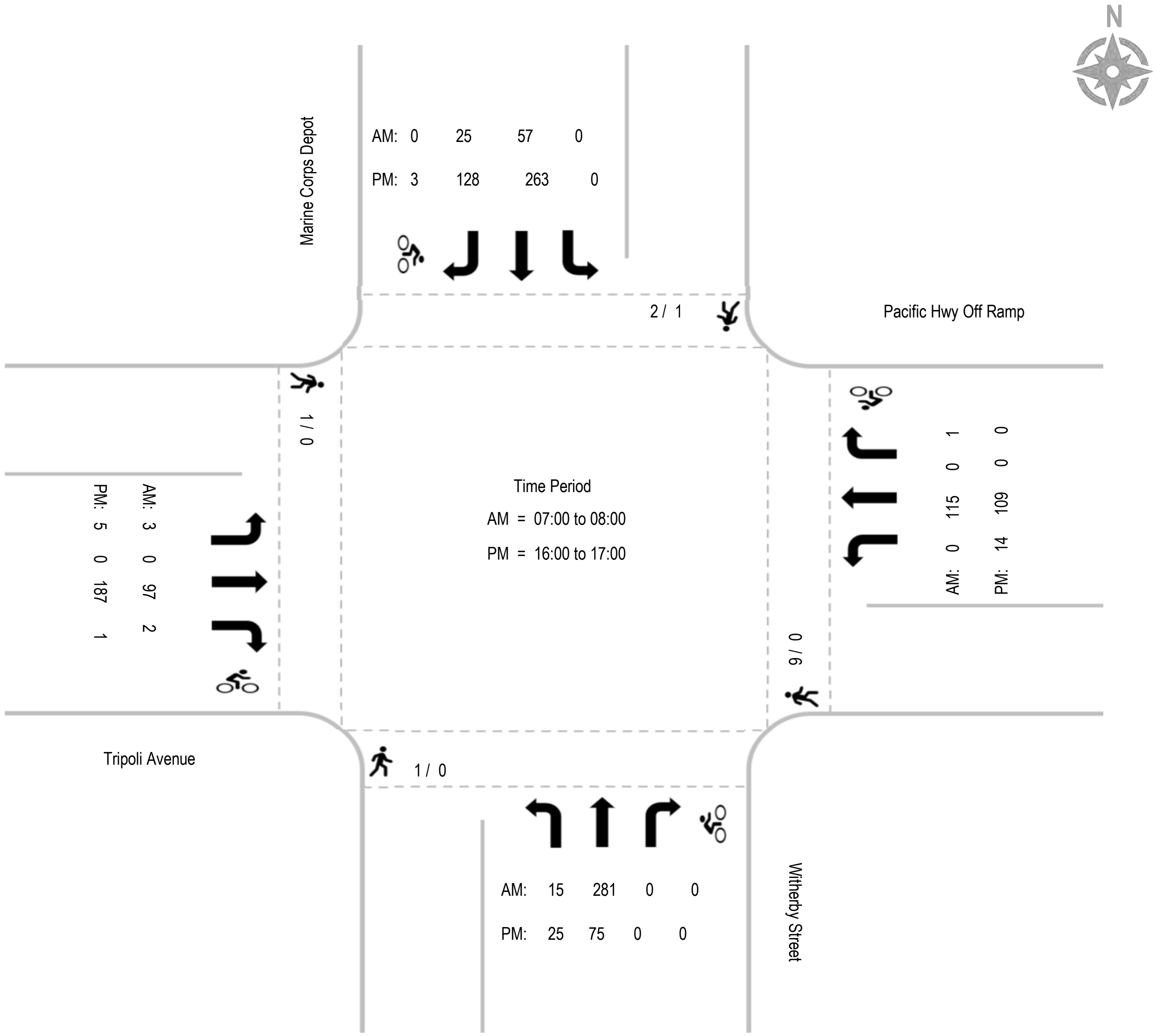
Location:	#21	File Name:	ITM-20-005-21
Intersection:	Witherby Street & Tripoli Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Marine Corps Depot Southbound				Pacific Hwy Off Ramp Westbound				Witherby Street Northbound				Tripoli Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	0	0	4	0	0	0	1	0	0	0	1	0	0	2	6	2
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0
8:15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ped Total	2				9				1				1				13	
Bike Total		0	0	0		0	1	0		0	0	0		0	0	2		3

PM	Marine Corps Depot Southbound				Pacific Hwy Off Ramp Westbound				Witherby Street Northbound				Tripoli Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	1				0				0				0				1	
Bike Total		0	3	0		0	0	0		0	0	0		0	0	1		4

Intersection Turning Movement - Peak Hour Summary

Location:	#21	File Name:	ITM-20-005-21
Intersection:	Witherby Street & Tripoli Avenue	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#27	File Name:	ITM-20-005-27
Intersection:	Hancock Street & Noell Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Hancock Street Southbound			Noell Street Westbound			Hancock Street Northbound			Noell Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	5	6	7	26	14	0	0	0	0	4	2	7	71
7:15	11	9	13	33	12	0	0	0	0	7	2	2	89
7:30	15	18	11	44	12	0	0	0	0	2	1	4	107
7:45	32	8	13	37	15	0	0	0	0	5	7	9	126
8:00	15	11	10	52	12	0	0	0	0	7	5	16	128
8:15	11	13	9	56	9	0	0	0	0	11	3	16	128
8:30	12	14	15	28	7	0	0	0	0	5	5	13	99
8:45	8	28	12	41	5	0	0	0	0	7	4	16	121
Total	109	107	90	317	86	0	0	0	0	48	29	83	869
Approach%	35.6	35.0	29.4	78.7	21.3	-	-	-	-	30.0	18.1	51.9	
Total%	12.5	12.3	10.4	36.5	9.9	-	-	-	-	5.5	3.3	9.6	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	73	50	43	189	48	-	-	-	-	25	16	45	489
Approach%	44.0	30.1	25.9	79.7	20.3	-	-	-	-	29.1	18.6	52.3	
Total%	14.9	10.2	8.8	38.7	9.8	-	-	-	-	5.1	3.3	9.2	
PHF			0.78			0.91			#DIV/0!			0.72	0.96

PM	Hancock Street Southbound			Noell Street Westbound			Hancock Street Northbound			Noell Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	19	26	9	45	11	8	0	0	0	10	8	18	154
16:15	18	28	11	31	7	2	0	0	0	9	6	21	133
16:30	23	20	14	42	16	6	0	0	0	8	5	13	147
16:45	20	23	6	42	11	6	0	0	0	9	10	11	138
17:00	25	30	13	62	9	6	0	0	0	10	9	24	188
17:15	20	46	8	53	12	14	0	0	0	19	9	15	196
17:30	18	30	10	47	13	7	0	0	0	5	9	28	167
17:45	21	32	12	30	7	12	0	0	0	9	6	32	161
Total	164	235	83	352	86	61	0	0	0	79	62	162	1284
Approach%	34.0	48.8	17.2	70.5	17.2	12.2	-	-	-	26.1	20.5	53.5	
Total%	12.8	18.3	6.5	27.4	6.7	4.8	-	-	-	6.2	4.8	12.6	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	84	138	43	192	41	39	-	-	-	43	33	99	712
Approach%	31.7	52.1	16.2	70.6	15.1	14.3	-	-	-	24.6	18.9	56.6	
Total%	11.8	19.4	6.0	27.0	5.8	5.5	-	-	-	6.0	4.6	13.9	
PHF			0.90			0.86			#DIV/0!			0.93	0.91

Intersection Turning Movement - Bicycle & Pedestrian Count

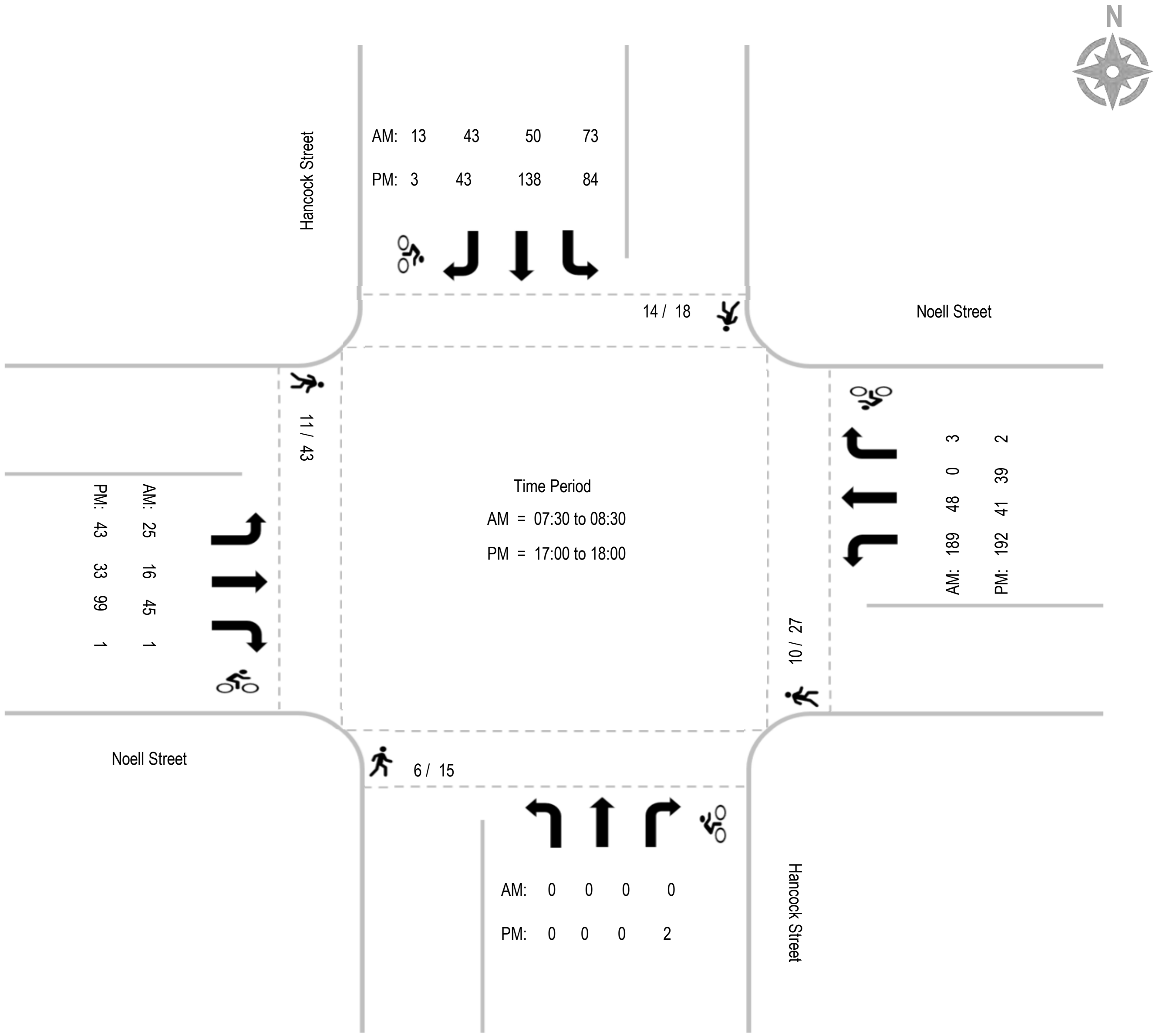
LINSCOTT LAW & GREENSPAN engineers		
Location:	#27	File Name: ITM-20-005-27
Intersection:	Hancock Street & Noell Street	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	Hancock Street Southbound				Noell Street Westbound				Hancock Street Northbound				Noell Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	2	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	3	3
7:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:30	2	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	6	0
7:45	2	0	1	0	1	0	0	0	0	0	0	0	5	0	0	0	8	1
8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
8:15	3	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	7	0
8:30	3	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	6	0
8:45	2	0	12	0	2	1	0	0	0	0	0	0	4	0	0	0	8	13
Ped Total	14				10				6				11				41	
Bike Total		0	13	0		3	0	0		0	0	0		0	1	0		17

PM	Hancock Street Southbound				Noell Street Westbound				Hancock Street Northbound				Noell Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	4	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	10	0
16:15	1	0	1	0	4	0	1	0	1	0	1	0	5	0	0	1	11	4
16:30	1	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	4	1
16:45	2	0	0	0	1	0	0	0	1	0	0	0	6	0	0	0	10	0
17:00	1	0	0	0	2	0	0	0	1	0	0	0	5	0	0	0	9	0
17:15	4	0	0	0	10	0	0	1	1	0	0	0	5	0	0	0	20	1
17:30	1	0	0	0	7	0	0	0	3	0	1	0	6	0	0	0	17	1
17:45	4	0	1	0	3	0	0	0	6	0	0	0	9	0	0	0	22	1
Ped Total	18				27				15				43				103	
Bike Total		0	3	0		0	1	1		0	2	0		0	0	1		8

Intersection Turning Movement - Peak Hour Summary

Location:	#27	File Name:	ITM-20-005-27
Intersection:	Hancock Street & Noell Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#31	File Name: ITM-20-005-31
Intersection:	San Diego Avenue & West Washington Street	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	San Diego Avenue Southbound			W.Washington Street Westbound			San Diego Avenue Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	122	116	39	37	2	26	69	0	411
7:15	0	0	0	0	147	146	35	66	2	48	113	0	557
7:30	0	0	0	0	211	136	29	63	1	32	92	0	564
7:45	0	0	0	0	161	163	32	80	4	37	122	0	599
8:00	0	0	0	0	159	126	31	51	3	26	136	0	532
8:15	0	0	0	0	144	137	33	44	5	43	164	0	570
8:30	0	0	0	0	172	126	26	52	9	47	104	0	536
8:45	0	0	0	0	141	115	28	52	4	42	128	0	510
Total	0	0	0	0	1257	1065	253	445	30	301	928	0	4279
Approach%	-	-	-	-	54.1	45.9	34.8	61.1	4.1	24.5	75.5	-	
Total%	-	-	-	-	29.4	24.9	5.9	10.4	0.7	7.0	21.7	-	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	-	-	-	675	562	125	238	13	138	514	-	2,265
Approach%	-	-	-	-	54.6	45.4	33.2	63.3	3.5	21.2	78.8	-	
Total%	-	-	-	-	29.8	24.8	5.5	10.5	0.6	6.1	22.7	-	
PHF			#DIV/0!			0.89			0.81			0.79	0.95

PM	San Diego Avenue Southbound			W.Washington Street Westbound			San Diego Avenue Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	0	102	116	29	43	6	54	316	0	666
16:15	0	0	0	0	98	95	39	36	5	67	331	0	671
16:30	0	0	0	0	118	151	31	44	11	69	343	0	767
16:45	0	0	0	0	106	114	40	42	2	58	305	0	667
17:00	0	0	0	0	107	142	30	52	6	65	336	0	738
17:15	0	0	0	0	121	121	26	43	10	69	362	0	752
17:30	0	0	0	0	101	94	34	52	12	70	341	0	704
17:45	0	0	0	0	101	106	29	52	9	86	317	0	700
Total	0	0	0	0	854	939	258	364	61	538	2651	0	5665
Approach%	-	-	-	-	47.6	52.4	37.8	53.3	8.9	16.9	83.1	-	
Total%	-	-	-	-	15.1	16.6	4.6	6.4	1.1	9.5	46.8	-	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	-	-	-	-	452	528	127	181	29	261	1,346	-	2,924
Approach%	-	-	-	-	46.1	53.9	37.7	53.7	8.6	16.2	83.8	-	
Total%	-	-	-	-	15.5	18.1	4.3	6.2	1.0	8.9	46.0	-	
PHF			#DIV/0!			0.91			0.96			0.93	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

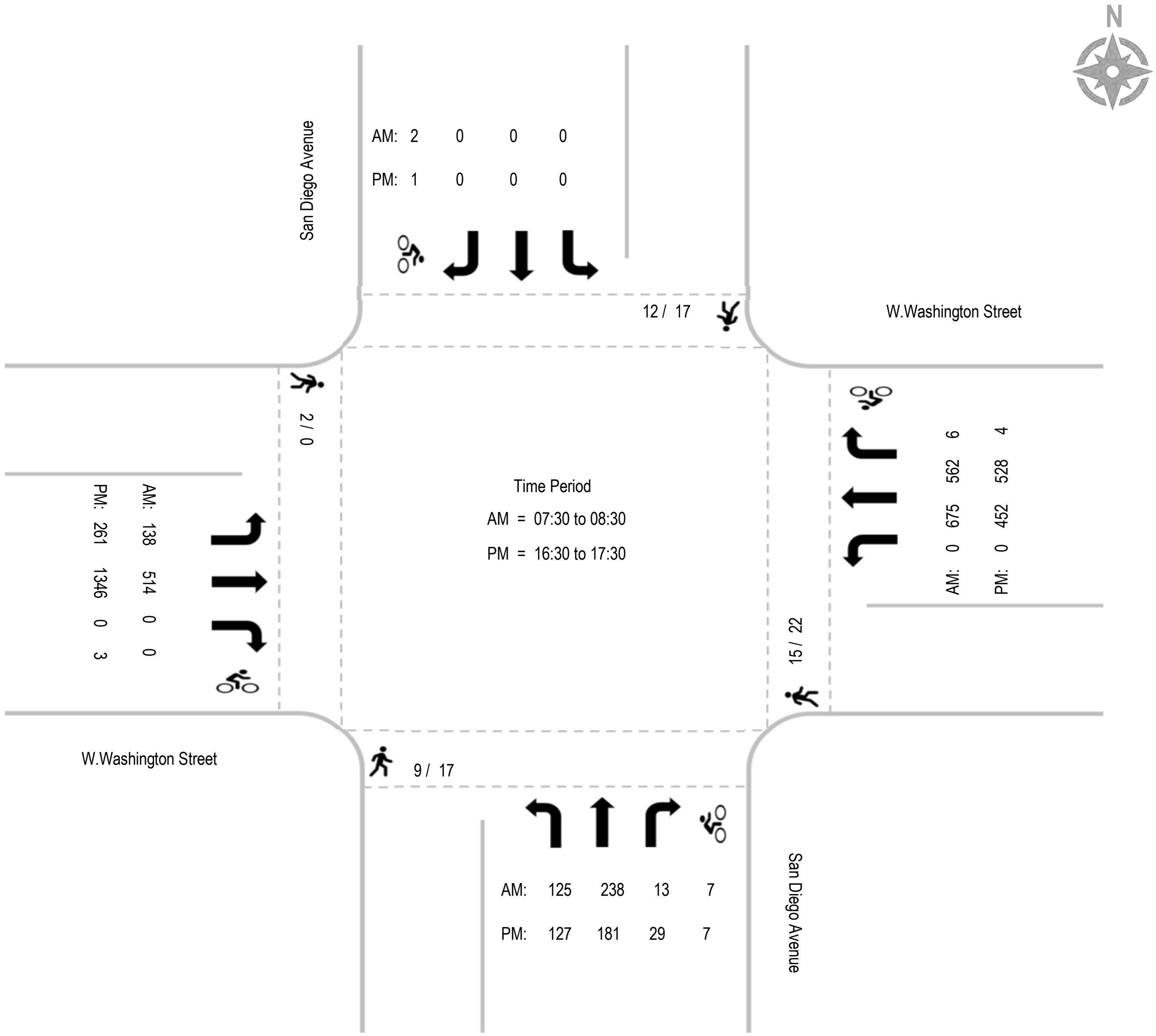
Location:	#31	File Name:	ITM-20-005-31
Intersection:	San Diego Avenue & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	San Diego Avenue Southbound				W.Washington Street Westbound				San Diego Avenue Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15	4	0	0	1	0	0	0	3	2	0	0	0	0	0	0	0	6	4
7:30	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	2
7:45	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	5	0
8:00	2	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	5	1
8:15	1	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	7	0
8:30	1	0	0	0	3	0	0	0	3	0	1	0	1	0	0	0	8	1
8:45	1	0	1	0	3	0	0	0	0	0	5	0	1	0	0	0	5	6
Ped Total	12				15				9				2				38	
Bike Total		0	1	1		0	1	5		1	6	0		0	0	0		15

PM	San Diego Avenue Southbound				W.Washington Street Westbound				San Diego Avenue Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	2	1
16:15	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	4	1
16:30	2	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	3	2
16:45	2	0	0	0	3	0	0	2	4	0	0	0	0	0	1	0	9	3
17:00	3	0	0	0	8	0	0	0	5	0	1	0	0	0	0	0	16	1
17:15	5	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	8	1
17:30	0	0	1	0	3	0	0	0	0	1	1	0	0	0	0	0	3	3
17:45	3	0	0	0	2	0	1	0	6	1	1	0	0	0	0	0	11	3
Ped Total	17				22				17				0				56	
Bike Total		0	1	0		0	1	3		3	4	0		0	3	0		15

Intersection Turning Movement - Peak Hour Summary

Location:	#31	File Name:	ITM-20-005-31
Intersection:	San Diego Avenue & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#30	File Name:	ITM-20-005-30
Intersection:	Hancock Avenue & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Hancock Avenue Southbound			W.Washington Street Westbound			Hancock Avenue Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	46	36	41	44	119	0	0	0	0	0	47	18	351
7:15	90	35	39	77	93	0	0	0	0	0	63	14	411
7:30	61	53	47	128	106	0	0	0	0	0	61	13	469
7:45	89	39	38	95	84	0	0	0	0	0	54	11	410
8:00	102	59	33	74	111	0	0	0	0	0	53	14	446
8:15	101	63	34	77	85	0	0	0	0	0	78	15	453
8:30	102	50	35	96	93	0	0	0	0	0	59	11	446
8:45	103	50	42	93	83	0	0	0	0	0	58	27	456
Total	694	385	309	684	774	0	0	0	0	0	473	123	3442
Approach%	50.0	27.7	22.3	46.9	53.1	-	-	-	-	-	79.4	20.6	
Total%	20.2	11.2	9.0	19.9	22.5	-	-	-	-	-	13.7	3.6	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	408	222	144	340	372	-	-	-	-	-	248	67	1,801
Approach%	52.7	28.7	18.6	47.8	52.2	-	-	-	-	-	78.7	21.3	
Total%	22.7	12.3	8.0	18.9	20.7	-	-	-	-	-	13.8	3.7	
PHF			0.98			0.94			#DIV/0!			0.85	0.97

PM	Hancock Avenue Southbound			W.Washington Street Westbound			Hancock Avenue Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	179	70	21	39	76	0	0	0	0	0	167	39	591
16:15	195	47	35	62	83	0	0	0	0	0	174	38	634
16:30	180	56	41	55	78	0	0	0	0	0	189	37	636
16:45	194	54	27	60	81	0	0	0	0	0	136	25	577
17:00	203	76	36	42	90	0	0	0	0	0	172	24	643
17:15	210	73	33	63	81	0	0	0	0	0	157	17	634
17:30	240	69	36	55	68	0	0	0	0	0	155	26	649
17:45	209	69	42	52	71	0	0	0	0	0	136	13	592
Total	1610	514	271	428	628	0	0	0	0	0	1286	219	4956
Approach%	67.2	21.5	11.3	40.5	59.5	-	-	-	-	-	85.4	14.6	
Total%	32.5	10.4	5.5	8.6	12.7	-	-	-	-	-	25.9	4.4	

PM Intersection Peak Hour: **17:00 to 18:00**

Volume	862	287	147	212	310	-	-	-	-	-	620	80	2,518
Approach%	66.5	22.1	11.3	40.6	59.4	-	-	-	-	-	88.6	11.4	
Total%	34.2	11.4	5.8	8.4	12.3	-	-	-	-	-	24.6	3.2	
PHF			0.94			0.91			#DIV/0!			0.89	0.97

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

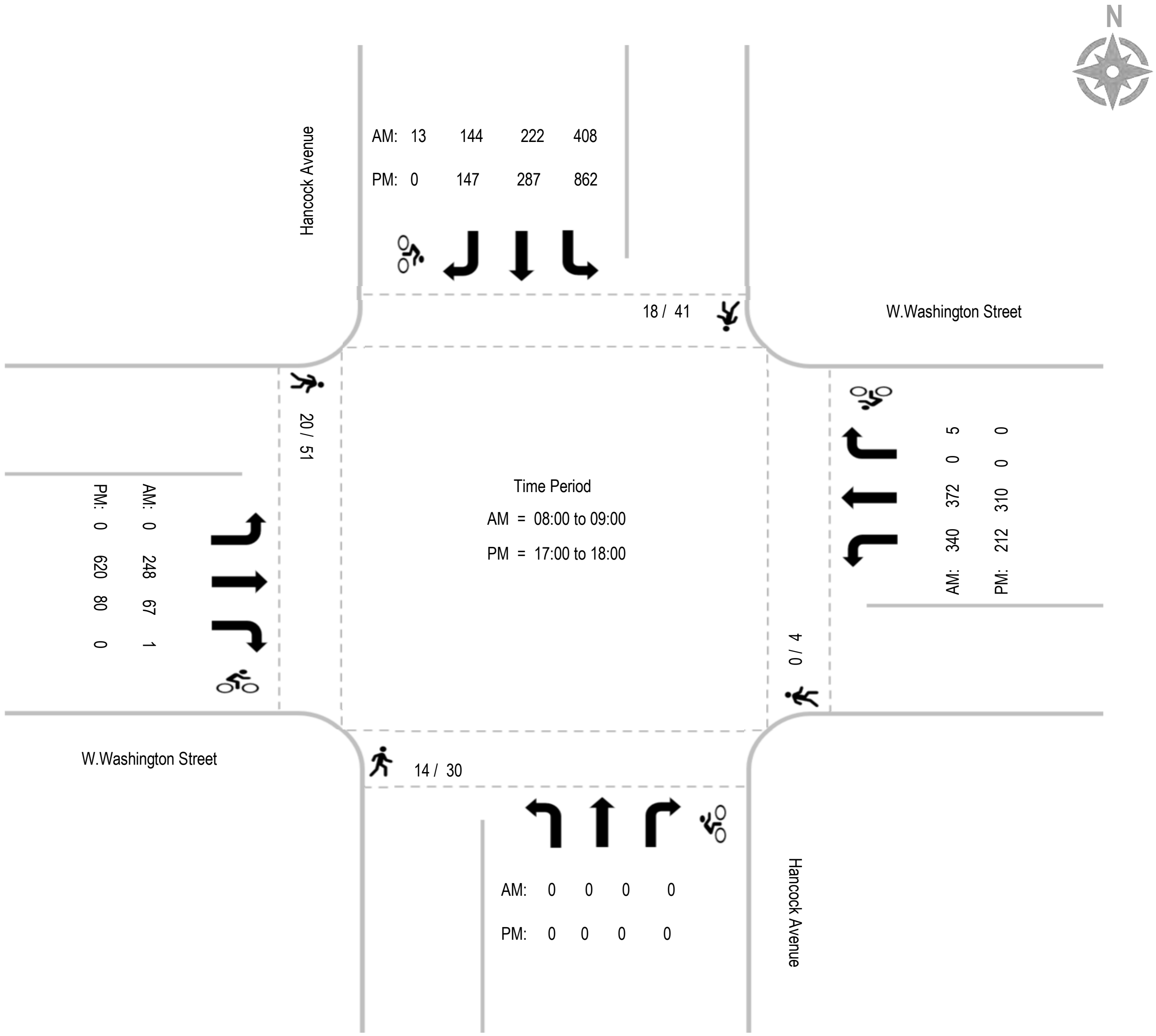
Location:	#30	File Name:	ITM-20-005-30
Intersection:	Hancock Avenue & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Hancock Avenue Southbound				W.Washington Street Westbound				Hancock Avenue Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	5	0	1	0	0	1	0	0	2	0	0	0	2	0	0	0	9	2
7:30	2	0	0	0	0	0	1	0	2	0	0	0	2	0	0	1	6	2
7:45	1	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	4	1
8:00	5	0	0	0	0	1	0	0	3	0	0	0	6	0	0	0	14	1
8:15	2	0	0	0	0	0	1	0	2	0	0	0	3	0	0	0	7	1
8:30	2	0	0	0	0	0	0	0	4	0	0	0	3	0	0	0	9	0
8:45	1	0	0	11	0	0	0	0	1	0	0	0	1	0	0	0	3	11
Ped Total	18				0				14				20				52	
Bike Total		0	1	12		2	3	0		0	0	0		0	0	1		19

PM	Hancock Avenue Southbound				W.Washington Street Westbound				Hancock Avenue Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	0	0	0	0	0	0	5	0	0	0	2	0	0	0	8	0
16:15	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0
16:30	7	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	12	0
16:45	6	0	0	0	1	0	0	0	4	0	0	0	8	0	0	0	19	0
17:00	6	0	0	0	2	0	0	0	8	0	0	0	6	0	0	0	22	0
17:15	6	0	0	0	0	0	0	0	1	0	0	0	7	0	0	0	14	0
17:30	4	0	0	0	1	0	0	0	1	0	0	0	6	0	0	0	12	0
17:45	5	0	0	0	0	0	0	0	8	0	0	0	19	0	0	0	32	0
Ped Total	41				4				30				51				126	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary

Location:	#30	File Name:	ITM-20-005-30
Intersection:	Hancock Avenue & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

Location:	#36	File Name:	ITM-20-005-36
Intersection:	Pacific Highway North On Ramp & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Hwy N.On Ramp Southbound			West Washington Street Westbound			- Northbound			West Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	59	83	0	0	0	7	58	0	207
7:15	0	0	0	0	80	53	0	0	0	11	75	0	219
7:30	0	0	0	0	87	63	0	0	0	12	60	0	222
7:45	0	0	0	0	63	57	0	0	0	6	65	0	191
8:00	0	0	0	0	47	66	0	0	0	8	64	0	185
8:15	0	0	0	0	58	59	0	0	0	9	82	0	208
8:30	0	0	0	0	53	64	0	0	0	3	68	0	188
8:45	0	0	0	0	61	65	0	0	0	5	76	0	207
Total	0	0	0	0	508	510	0	0	0	61	548	0	1627
Approach%	-	-	-	-	49.9	50.1	-	-	-	10.0	90.0	-	
Total%	-	-	-	-	31.2	31.3	-	-	-	3.7	33.7	-	

AM Intersection Peak Hour: **07:00 to 08:00**

Volume	-	-	-	-	289	256	-	-	-	36	258	-	839
Approach%	-	-	-	-	53.0	47.0	-	-	-	12.2	87.8	-	
Total%	-	-	-	-	34.4	30.5	-	-	-	4.3	30.8	-	
PHF			#DIV/0!			0.91			#DIV/0!			0.85	0.94

PM	Pacific Hwy N.On Ramp Southbound			West Washington Street Westbound			- Northbound			West Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	0	52	64	0	0	0	13	194	0	323
16:15	0	0	0	0	63	47	0	0	0	12	198	0	320
16:30	0	0	0	0	60	58	0	0	0	21	201	0	340
16:45	0	0	0	0	61	51	0	0	0	14	145	0	271
17:00	0	0	0	0	36	69	0	0	0	12	182	0	299
17:15	0	0	0	0	36	57	0	0	0	10	152	0	255
17:30	0	0	0	0	49	54	0	0	0	17	163	0	283
17:45	0	0	0	0	53	55	0	0	0	12	142	0	262
Total	0	0	0	0	410	455	0	0	0	111	1377	0	2353
Approach%	-	-	-	-	47.4	52.6	-	-	-	7.5	92.5	-	
Total%	-	-	-	-	17.4	19.3	-	-	-	4.7	58.5	-	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	-	-	-	-	236	220	-	-	-	60	738	-	1,254
Approach%	-	-	-	-	51.8	48.2	-	-	-	7.5	92.5	-	
Total%	-	-	-	-	18.8	17.5	-	-	-	4.8	58.9	-	
PHF			#DIV/0!			0.97			#DIV/0!			0.90	0.92

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#36	File Name:	ITM-20-005-36
Intersection:	Pacific Highway North On Ramp & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

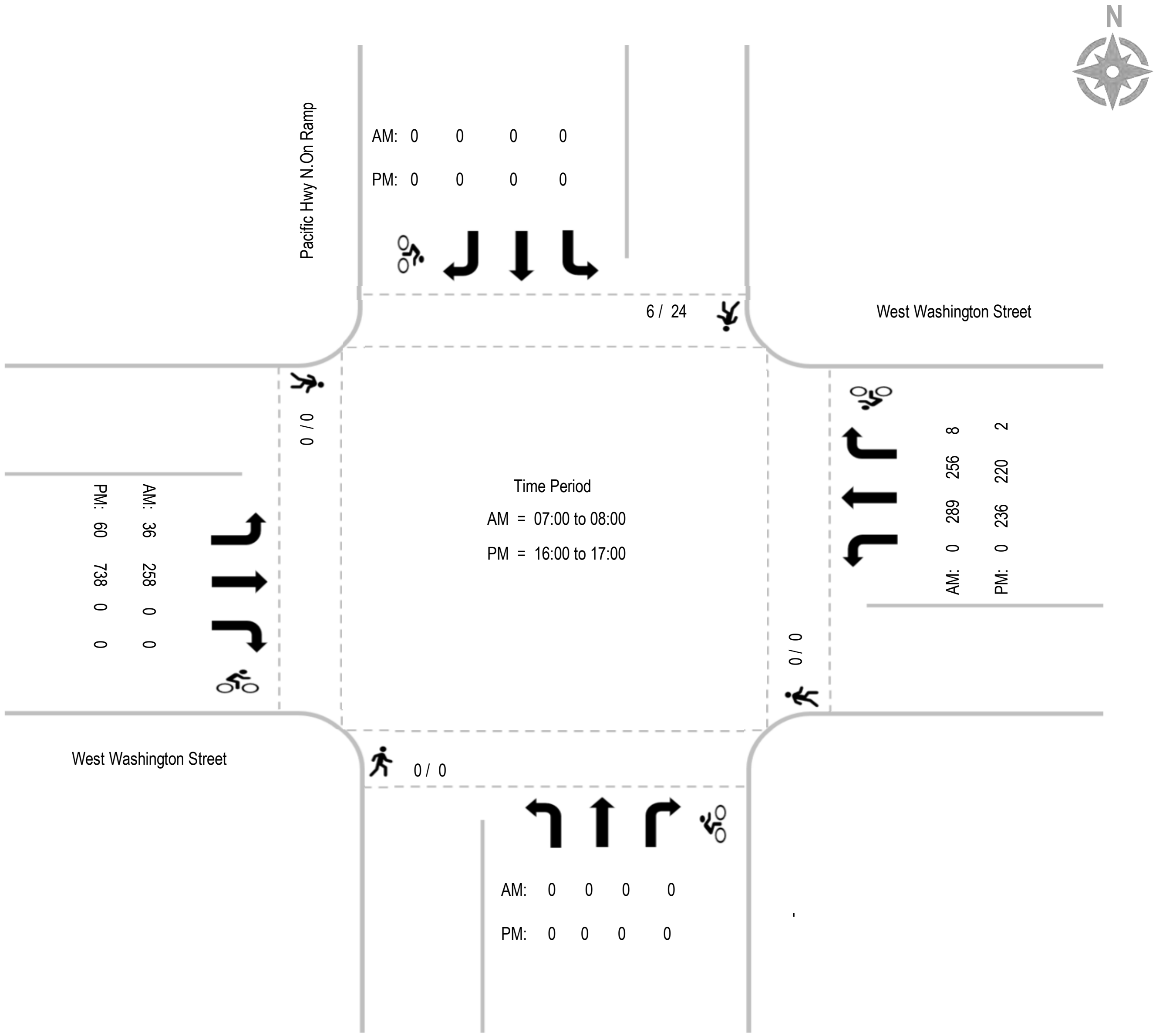
AM	Pacific Hwy N.On Ramp Southbound				West Washington Street Westbound				- Northbound				West Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:45	1	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	1	6
Ped Total	6				0				0				0				6	
Bike Total		0	0	0		0	8	0		0	0	0		0	0	0		8

PM	Pacific Hwy N.On Ramp Southbound				West Washington Street Westbound				- Northbound				West Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:15	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1
16:30	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
16:45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
17:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
17:15	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	1
17:30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	24				0				0				0				24	
Bike Total		0	0	0		0	2	0		0	0	0		0	0	0		2

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#36	File Name:	ITM-20-005-36
Intersection:	Pacific Highway North On Ramp & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 | info@yourcountdata.com

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#29	File Name:	ITM-20-005-29
Intersection:	Frontage Road & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Frontage Road Southbound			West Washington Street Westbound			Frontage Road Northbound			West Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	3	0	6	0	134	4	2	4	7	2	56	0	218
7:15	2	0	4	0	125	9	4	0	5	3	72	0	224
7:30	3	0	5	0	142	9	3	2	8	0	60	0	232
7:45	1	0	6	0	111	20	3	4	8	5	60	0	218
8:00	3	0	5	0	100	20	8	4	4	8	56	0	208
8:15	5	0	5	0	107	12	5	1	9	4	78	0	226
8:30	6	0	5	0	111	20	1	2	6	7	61	0	219
8:45	7	0	6	0	115	14	5	0	7	10	66	0	230
Total	30	0	42	0	945	108	31	17	54	39	509	0	1775
Approach%	41.7	-	58.3	-	89.7	10.3	30.4	16.7	52.9	7.1	92.9	-	
Total%	1.7	-	2.4	-	53.2	6.1	1.7	1.0	3.0	2.2	28.7	-	

AM Intersection Peak Hour: **07:00 to 08:00**

Volume	9	-	21	-	512	42	12	10	28	10	248	-	892
Approach%	30.0	-	70.0	-	92.4	7.6	24.0	20.0	56.0	3.9	96.1	-	
Total%	1.0	-	2.4	-	57.4	4.7	1.3	1.1	3.1	1.1	27.8	-	
PHF			0.83			0.92			0.83			0.86	0.96

PM	Frontage Road Southbound			West Washington Street Westbound			Frontage Road Northbound			West Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	8	0	10	0	101	13	5	3	14	12	182	0	348
16:15	7	0	11	0	96	23	3	5	19	8	190	0	362
16:30	14	0	14	0	99	12	5	2	15	8	193	0	362
16:45	8	0	13	0	96	22	3	4	12	5	140	0	303
17:00	1	0	2	0	102	9	1	3	24	7	175	0	324
17:15	9	0	1	0	90	20	2	0	19	6	146	0	293
17:30	8	0	6	0	95	18	2	1	15	5	158	0	308
17:45	5	0	10	0	95	16	3	2	16	5	137	0	289
Total	60	0	67	0	774	133	24	20	134	56	1321	0	2589
Approach%	47.2	-	52.8	-	85.3	14.7	13.5	11.2	75.3	4.1	95.9	-	
Total%	2.3	-	2.6	-	29.9	5.1	0.9	0.8	5.2	2.2	51.0	-	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	37	-	48	-	392	70	16	14	60	33	705	-	1,375
Approach%	43.5	-	56.5	-	84.8	15.2	17.8	15.6	66.7	4.5	95.5	-	
Total%	2.7	-	3.5	-	28.5	5.1	1.2	1.0	4.4	2.4	51.3	-	
PHF			0.76			0.97			0.83			0.92	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#29	File Name:	ITM-20-005-29
Intersection:	Frontage Road & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

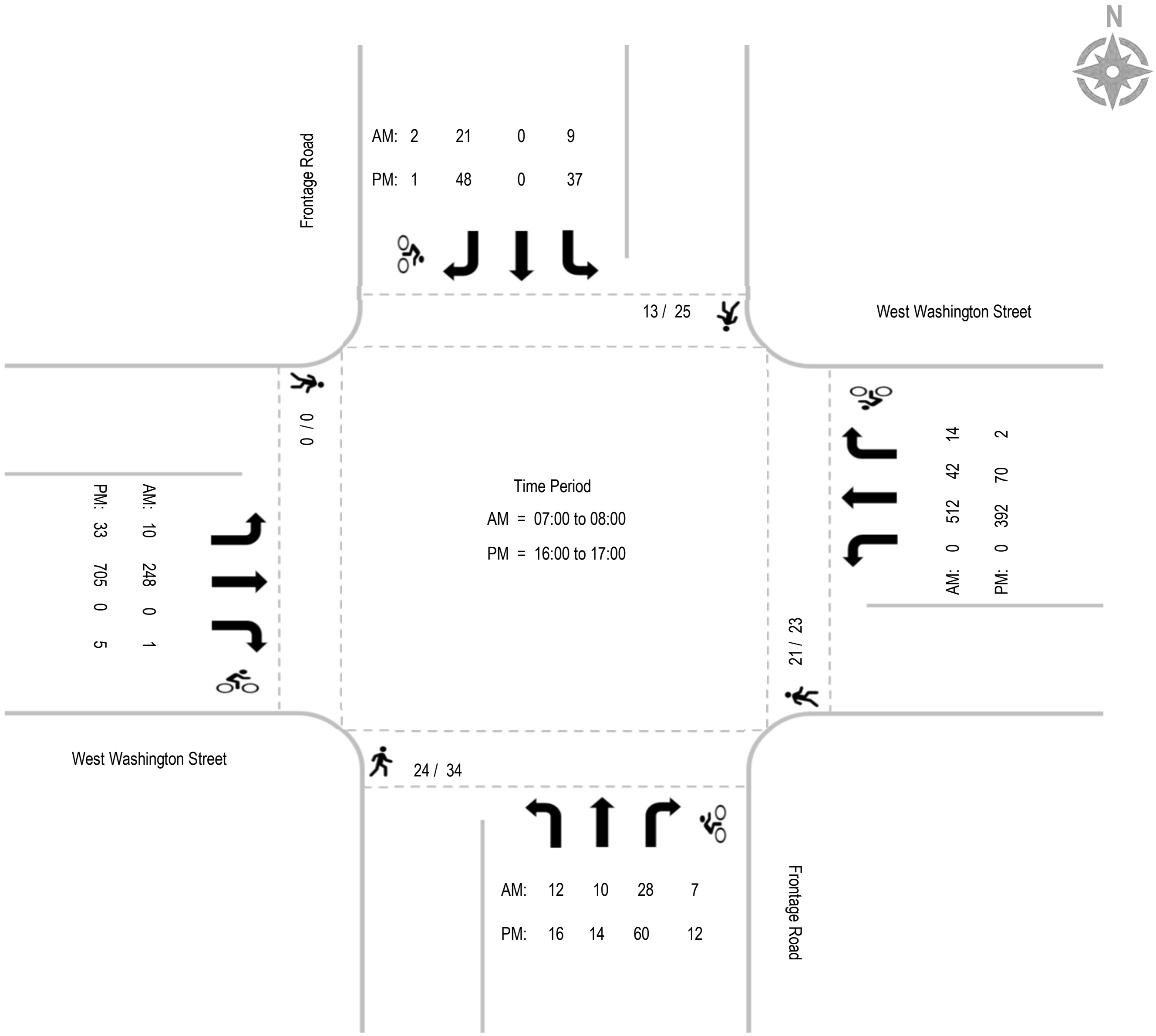
AM	Frontage Road Southbound				West Washington Street Westbound				Frontage Road Northbound				West Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	0	0	4	0	1	0	4	0	0	0	0	0	0	0	9	1
7:15	4	0	0	1	2	0	0	0	2	0	1	1	0	0	0	0	8	3
7:30	1	0	0	0	2	0	0	1	1	0	1	1	0	0	1	0	4	4
7:45	0	0	0	0	3	0	0	1	3	0	0	0	0	0	0	0	6	1
8:00	4	0	0	0	3	0	0	0	5	0	0	0	0	0	0	0	12	0
8:15	1	0	0	0	2	0	1	0	2	0	1	0	0	0	0	0	5	2
8:30	1	0	0	0	4	0	0	0	7	0	1	0	0	0	0	0	12	1
8:45	1	0	1	0	1	0	10	0	0	0	1	0	0	0	0	0	2	12
Ped Total	13				21				24				0				58	
Bike Total		0	1	1		0	12	2		0	5	2		0	1	0		24

PM	Frontage Road Southbound				West Washington Street Westbound				Frontage Road Northbound				West Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	8	0	4	0	0	0	0	0	8	4
16:15	2	0	1	0	4	0	0	0	5	0	1	0	0	0	1	0	11	3
16:30	8	0	0	0	6	0	0	0	6	0	0	0	0	0	1	0	20	1
16:45	4	0	0	0	1	0	0	0	2	1	1	0	0	0	1	0	7	3
17:00	3	0	0	0	4	1	0	0	3	0	1	0	0	1	0	0	10	3
17:15	2	0	0	0	3	0	0	0	4	0	1	0	0	0	0	0	9	1
17:30	5	0	0	0	3	0	0	0	3	0	2	0	0	0	0	0	11	2
17:45	1	0	0	0	2	0	0	1	3	0	1	0	0	0	1	0	6	3
Ped Total	25				23				34				0				82	
Bike Total		0	1	0		1	0	1		1	11	0		1	4	0		20

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#29	File Name:	ITM-20-005-29
Intersection:	Frontage Road & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location: #28R	File Name:	ITM-20-005-28R
Intersection: Pacific Highway South & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count: Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway South Southbound			W.Washington Street Westbound			Pacific Highway South Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	33	3	11	10	58	0	0	0	0	0	32	4	151
7:15	56	4	14	22	51	0	0	0	0	0	31	0	178
7:30	36	6	13	18	60	0	0	0	0	0	40	5	178
7:45	35	3	14	18	46	0	0	0	0	0	27	5	148
8:00	44	7	17	22	30	0	0	0	0	0	27	5	152
8:15	47	8	12	24	34	0	0	0	0	0	54	4	183
8:30	39	4	12	14	37	0	0	0	0	0	34	3	143
8:45	51	8	14	27	28	0	0	0	0	0	38	5	171
Total	341	43	107	155	344	0	0	0	0	0	283	31	1304
Approach%	69.5	8.8	21.8	31.1	68.9	-	-	-	-	-	90.1	9.9	
Total%	26.2	3.3	8.2	11.9	26.4	-	-	-	-	-	21.7	2.4	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	162	24	56	82	170	-	-	-	-	-	148	19	661
Approach%	66.9	9.9	23.1	32.5	67.5	-	-	-	-	-	88.6	11.4	
Total%	24.5	3.6	8.5	12.4	25.7	-	-	-	-	-	22.4	2.9	
PHF			0.89			0.81			#DIV/0!			0.72	0.90

PM	Pacific Highway South Southbound			W.Washington Street Westbound			Pacific Highway South Northbound			W.Washington Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	127	14	17	33	19	0	0	0	0	0	74	9	293
16:15	141	16	18	24	33	0	0	0	0	0	76	8	316
16:30	128	15	18	34	33	0	0	0	0	0	81	6	315
16:45	142	16	20	24	33	0	0	0	0	0	82	9	326
17:00	127	16	18	17	16	0	0	0	0	0	73	10	277
17:15	112	14	11	18	22	0	0	0	0	0	39	5	221
17:30	122	22	15	28	17	0	0	0	0	0	46	10	260
17:45	112	14	11	18	22	0	0	0	0	0	39	5	221
Total	1011	127	128	196	195	0	0	0	0	0	510	62	2229
Approach%	79.9	10.0	10.1	50.1	49.9	-	-	-	-	-	89.2	10.8	
Total%	45.4	5.7	5.7	8.8	8.7	-	-	-	-	-	22.9	2.8	

PM Intersection Peak Hour: **16:00 to 17:00**

Volume	538	61	73	115	118	-	-	-	-	-	313	32	1,250
Approach%	80.1	9.1	10.9	49.4	50.6	-	-	-	-	-	90.7	9.3	
Total%	43.0	4.9	5.8	9.2	9.4	-	-	-	-	-	25.0	2.6	
PHF			0.94			0.87			#DIV/0!			0.95	0.96

Intersection Turning Movement - Bicycle & Pedestrian Count

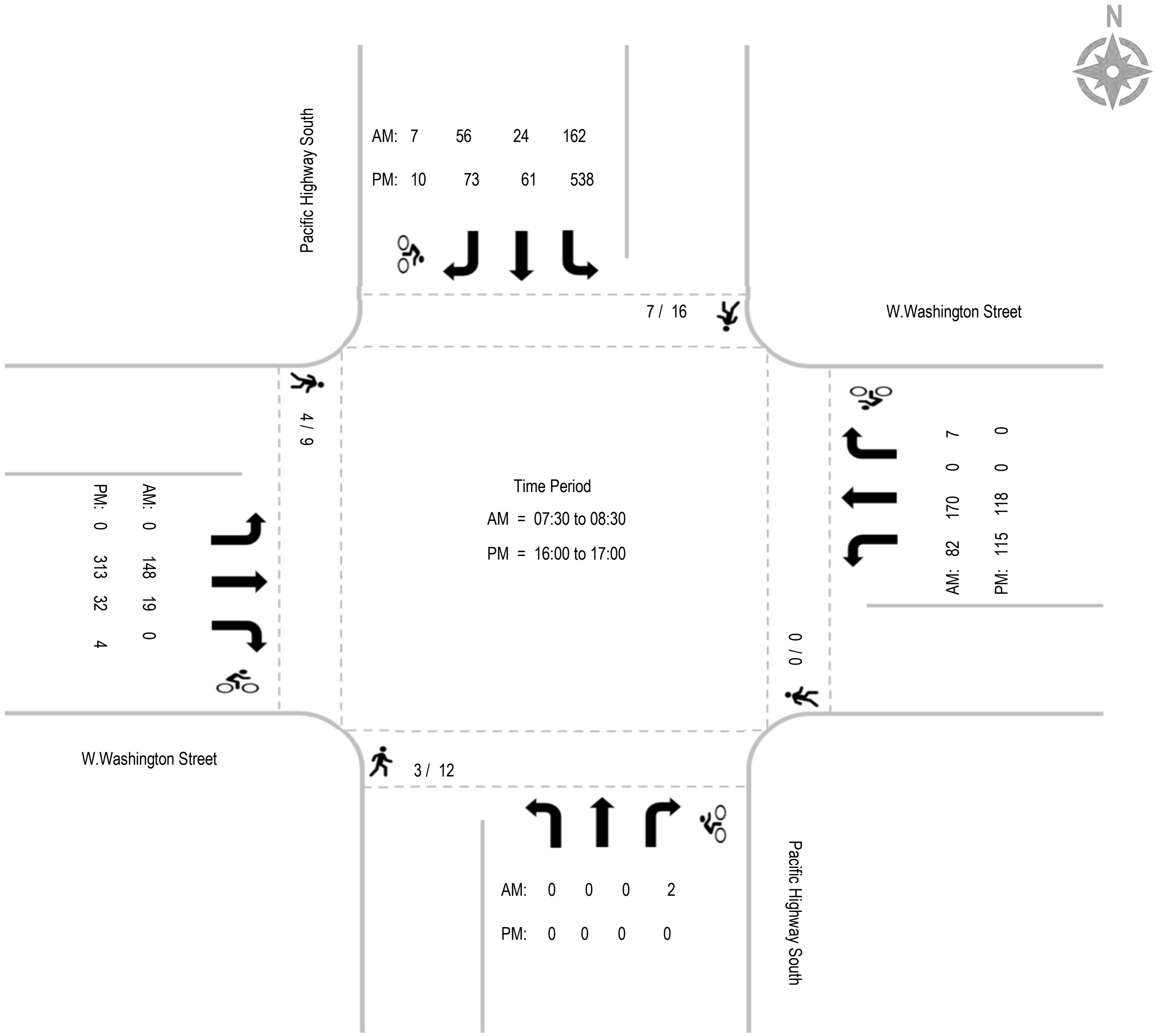
LINSCOTT LAW & GREENSPAN engineers		
Location:	#28R	File Name: ITM-20-005-28R
Intersection:	Pacific Highway South & West Washington Street	Project: LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020	Old Town Campus

AM	Pacific Highway South Southbound				W.Washington Street Westbound				Pacific Highway South Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
7:15	4	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	5	2
7:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
8:00	2	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	4	2
8:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30	0	0	1	0	0	0	0	0	2	0	0	0	1	0	0	0	3	1
8:45	0	0	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6
Ped Total	7				0				3				4				14	
Bike Total		0	7	0		7	0	0		0	2	0		0	0	0		16

PM	Pacific Highway South Southbound				W.Washington Street Westbound				Pacific Highway South Northbound				W.Washington Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	1	2	4
16:15	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	5	0
16:30	2	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	4	2
16:45	3	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	5	2
17:00	4	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	6	1
17:15	2	0	4	0	0	0	0	0	2	0	0	0	2	0	0	0	6	4
17:30	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	0
17:45	2	1	0	0	0	0	0	0	2	0	0	0	2	0	0	0	6	1
Ped Total	16				0				12				9				37	
Bike Total		2	8	0		0	0	0		0	0	0		0	3	1		14

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers			
Location:	#28R	File Name:	ITM-20-005-28R
Intersection:	Pacific Highway South & West Washington Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers			
Location:	#32	File Name:	ITM-20-005-32
Intersection:	Pacific Highway & Sassafras Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway			Sassafras Street			Pacific Highway			Sassafras Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	9	30	6	52	38	12	22	30	11	2	22	5	239
7:15	13	44	5	48	41	15	18	45	6	2	15	1	253
7:30	8	43	8	48	46	12	26	46	3	5	5	7	257
7:45	11	52	6	43	56	14	20	68	6	2	12	7	297
8:00	10	48	1	47	42	18	34	49	8	1	14	19	291
8:15	11	53	9	45	65	13	17	47	9	8	29	10	316
8:30	8	43	9	57	62	14	21	36	8	2	29	10	299
8:45	10	67	7	59	64	22	39	46	5	2	25	18	364
Total	80	380	51	399	414	120	197	367	56	24	151	77	2316
Approach%	15.7	74.4	10.0	42.8	44.4	12.9	31.8	59.2	9.0	9.5	59.9	30.6	
Total%	3.5	16.4	2.2	17.2	17.9	5.2	8.5	15.8	2.4	1.0	6.5	3.3	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	39	211	26	208	233	67	111	178	30	13	97	57	1,270
Approach%	14.1	76.4	9.4	40.9	45.9	13.2	34.8	55.8	9.4	7.8	58.1	34.1	
Total%	3.1	16.6	2.0	16.4	18.3	5.3	8.7	14.0	2.4	1.0	7.6	4.5	
PHF			0.82			0.88			0.88			0.89	0.00

PM	Pacific Highway			Sassafras Street			Pacific Highway			Sassafras Street			
	Southbound			**Westbound**			**Northbound**			**Eastbound**			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	24	163	13	61	37	10	31	60	6	6	28	16	455
16:15	25	129	13	85	58	21	36	80	16	4	37	20	524
16:30	32	138	5	85	60	14	33	64	12	10	41	38	532
16:45	33	173	10	85	59	9	33	58	11	3	32	17	523
17:00	29	141	9	102	57	12	22	82	16	11	33	24	538
17:15	23	171	7	99	32	17	32	73	12	7	36	19	528
17:30	26	166	9	104	40	18	26	65	7	10	35	23	529
17:45	18	181	8	97	35	11	25	62	8	9	38	18	510
Total	210	1262	74	718	378	112	238	544	88	60	280	175	4139
Approach%	13.6	81.6	4.8	59.4	31.3	9.3	27.4	62.5	10.1	11.7	54.4	34.0	
Total%	5.1	30.5	1.8	17.3	9.1	2.7	5.8	13.1	2.1	1.4	6.8	4.2	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	117	623	31	371	208	52	120	277	51	31	142	98	2,121
Approach%	15.2	80.8	4.0	58.8	33.0	8.2	26.8	61.8	11.4	11.4	52.4	36.2	
Total%	5.5	29.4	1.5	17.5	9.8	2.5	5.7	13.1	2.4	1.5	6.7	4.6	
PHF			0.89			0.92			0.93			0.76	0.00

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

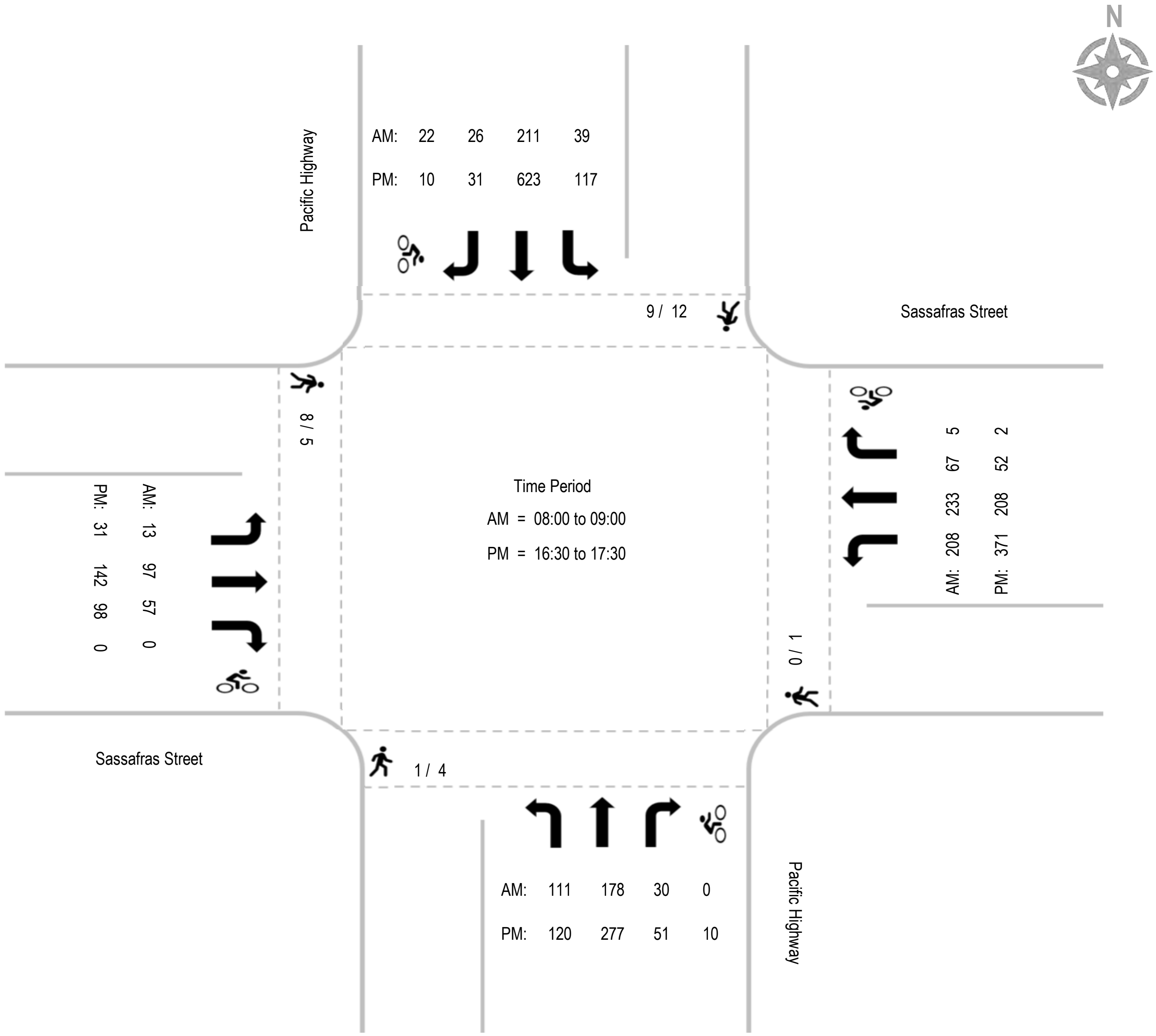
Location:	#32	File Name:	ITM-20-005-32
Intersection:	Pacific Highway & Sassafras Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus

AM	Pacific Highway **Southbound**				Sassafras Street **Westbound**				Pacific Highway **Northbound**				Sassafras Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
7:15	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:30	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	1	3
7:45	1	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	3	2
8:00	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
8:15	4	0	0	0	0	0	2	0	1	0	0	0	2	0	0	0	7	2
8:30	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1
8:45	0	0	15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	16
Ped Total	9				0				1				8				18	
Bike Total		1	21	0		0	5	0		0	0	0		0	0	0		27

PM	Pacific Highway **Southbound**				Sassafras Street **Westbound**				Pacific Highway **Northbound**				Sassafras Street **Eastbound**				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	7
16:15	5	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	5	6
16:30	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0
16:45	0	0	1	0	0	0	0	0	1	0	2	0	2	0	0	0	3	3
17:00	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	2	1
17:15	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
17:30	4	0	1	0	0	0	0	1	0	0	1	0	2	0	0	0	6	3
17:45	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	1
Ped Total	12				1				4				5				22	
Bike Total		0	10	0		1	0	1		0	10	0		0	0	0		22

Intersection Turning Movement - Peak Hour Summary

Location:	#32	File Name:	ITM-20-005-32
Intersection:	Pacific Highway & Sassafras Street	Project:	LLG Ref. 3-19-3171
Date of Count:	Wednesday, January 22, 2020		Old Town Campus



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4224-015 **Day:** Monday

City: San Diego **Date:** 6/12/2017

PM

NS/EW Streets:	Pacific Hwy			Pacific Hwy			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	1	1	2	0	1	2	0	
4:00 PM	13	51	18	35	116	95	77	274	24	24	110	15	852
4:15 PM	7	60	24	52	146	100	46	220	14	19	118	24	830
4:30 PM	13	91	34	50	223	120	85	272	19	22	94	33	1056
4:45 PM	11	54	30	42	165	96	55	248	9	18	113	20	861
5:00 PM	27	76	30	51	164	100	51	209	16	22	128	28	902
5:15 PM	11	84	31	35	129	101	69	208	9	14	127	15	833
5:30 PM	9	63	26	27	120	97	43	159	6	22	111	21	704
5:45 PM	17	59	33	34	100	125	58	192	5	15	142	10	790
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	108	538	226	326	1163	834	484	1782	102	156	943	166	6828
APPROACH %'s :	12.39%	61.70%	25.92%	14.03%	50.06%	35.90%	20.44%	75.25%	4.31%	12.33%	74.55%	13.12%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	62	305	125	178	681	417	260	937	53	76	462	96	3652
PEAK HR FACTOR :		0.891			0.812			0.831			0.890		0.865

CONTROL : Signalized

UTURNS			
NB	SB	EB	WB
5	5	0	0
1	9	0	0
3	4	0	0
2	6	0	0
5	4	0	0
3	2	0	0
0	4	0	0
2	5	0	2
NB	SB	EB	WB
21	39	0	2

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4224-015

City: San Diego

Day: Monday

Date: 6/12/2017

AM

NS/EW Streets:	Pacific Hwy			Pacific Hwy			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	1	1	2	0	1	2	0	
7:00 AM	12	51	4	3	23	88	34	80	0	5	142	9	451
7:15 AM	17	39	14	7	30	83	48	124	1	5	170	11	549
7:30 AM	19	36	15	4	33	88	44	86	2	8	139	14	488
7:45 AM	23	56	17	7	19	97	53	109	4	5	162	15	567
8:00 AM	20	58	10	10	28	88	55	119	1	6	196	13	604
8:15 AM	24	51	12	16	32	118	55	116	3	9	170	8	614
8:30 AM	15	55	19	10	41	112	62	134	4	10	168	16	646
8:45 AM	19	49	20	14	48	115	67	123	5	13	202	9	684
9:00 AM	15	71	13	18	33	95	56	158	6	11	190	32	698
9:15 AM	9	46	16	24	35	127	55	152	7	15	204	11	701
9:30 AM	18	58	14	16	40	112	50	169	7	10	185	15	694
9:45 AM	16	49	19	24	39	109	53	200	7	8	178	15	717
10:00 AM	23	39	15	24	40	123	65	169	5	12	140	22	677
10:15 AM	13	48	23	9	49	77	52	163	7	7	160	14	622
10:30 AM	11	58	11	21	59	121	47	141	6	10	153	17	655
10:45 AM	8	50	16	19	33	103	73	204	5	12	160	9	692

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	262	814	238	226	582	1656	869	2247	70	146	2719	230	10059
APPROACH %'s :	19.94%	61.95%	18.11%	9.17%	23.62%	67.21%	27.28%	70.53%	2.20%	4.72%	87.85%	7.43%	

PEAK HR START TIME :	900 AM												TOTAL
PEAK HR VOL :	58	224	62	82	147	443	214	679	27	44	757	73	2810
PEAK HR FACTOR :		0.869			0.903			0.885			0.938		0.980

CONTROL : Signalized

UTURNS			
NB	SB	EB	WB
1	1	0	0
1	2	0	0
3	1	0	0
4	0	0	0
8	2	0	0
5	5	0	0
2	2	0	0
5	2	0	0
2	4	0	0
1	7	0	0
3	9	0	1
2	6	0	0
6	7	0	0
2	1	0	0
3	4	0	0
1	5	0	0

NB	SB	EB	WB
49	58	0	1

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4224-015 **Day:** Monday

City: San Diego **Date:** 6/12/2017

NOON

NS/EW Streets:	Pacific Hwy			Pacific Hwy			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	1	1	2	0	1	2	0	

	UTURNS			
	NB	SB	EB	WB

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

NB	SB	EB	WB
0	0	0	0

PEAK HR START TIME :	0 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.000

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Pacific Hwy and Laurel St , San Diego

Date: 6/12/2017

Day: Monday

Project #: 17-4224-015

City: San Diego

AM Peak Hour	900 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Pacific Hwy)

	Right	Through	Left	Out
Lanes	1	3	1	
AM	443	147	82	511
NOON	0	0	0	0
PM	417	681	178	661

Eastbound Approach (Laurel St)

	Lanes	AM	NOON	PM
Out		1258	0	941
Left	1	214	0	260
Through	2	679	0	937
Right	0	27	0	53

Westbound Approach

	AM	NOON	PM	Lanes
Right	73	0	96	0
Through	757	0	462	2
Left	44	0	76	1
Out	823	0	1240	

CONTROL

Signalized

Northbound Approach

	Out	Left	Through	Right
AM	218	58	224	62
NOON	0	0	0	0
PM	810	62	305	125
Lanes		1	3	0

Count Periods	Start	End
AM	7:00 AM	11:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	672	511
North Leg	NOON	0	0
North Leg	PM	1276	661
East Leg	AM	874	823
East Leg	NOON	0	0
East Leg	PM	634	1240
South Leg	AM	344	218
South Leg	NOON	0	0
South Leg	PM	492	810
West Leg	AM	920	1258
West Leg	NOON	0	0
West Leg	PM	1250	941

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1183	0	1937
East Leg	1697	0	1874
South Leg	562	0	1302
West Leg	2178	0	2191

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

Project ID: 17-4224-014 **Day:** Monday

City: San Diego **Date:** 6/12/2017

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2.5	0.5	2	3	0	0	0	0	1	0	1	
7:00 AM	0	496	5	137	232	0	0	0	0	4	0	12	886
7:15 AM	0	529	18	153	309	0	0	0	0	1	0	12	1022
7:30 AM	0	487	14	153	291	0	0	0	0	10	0	3	958
7:45 AM	0	507	9	144	370	0	0	0	0	4	0	7	1041
8:00 AM	0	421	14	189	320	0	0	0	0	9	0	8	961
8:15 AM	0	515	15	146	340	0	0	0	0	8	0	9	1033
8:30 AM	0	473	14	198	329	0	0	0	0	3	0	6	1023
8:45 AM	0	553	9	190	406	0	0	0	0	7	0	24	1189
9:00 AM	0	431	11	209	407	0	0	0	0	9	0	10	1077
9:15 AM	0	486	18	198	414	0	0	0	0	12	0	5	1133
9:30 AM	0	405	16	228	395	0	0	0	0	14	0	12	1070
9:45 AM	0	466	12	252	419	0	0	0	0	10	0	9	1168
10:00 AM	0	422	12	228	409	0	0	0	0	11	0	2	1084
10:15 AM	0	402	10	211	356	0	0	0	0	11	0	1	991
10:30 AM	0	418	13	188	401	0	0	0	0	10	0	5	1035
10:45 AM	0	335	19	253	433	0	0	0	0	8	0	4	1052
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	7346	209	3077	5831	0	0	0	0	131	0	129	16723
APPROACH %'s :	0.00%	97.23%	2.77%	34.54%	65.46%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	50.38%	0.00%	49.62%	
PEAK HR START TIME :	845 AM												TOTAL
PEAK HR VOL :	0	1875	54	825	1622	0	0	0	0	42	0	51	4469
PEAK HR FACTOR :		0.858			0.982			0.000			0.750		0.940

CONTROL : Signalized

UTURNS			
NB	SB	EB	WB
0	4	0	0
0	3	0	0
0	5	0	0
0	0	0	0
0	3	0	0
0	3	0	0
0	0	0	0
0	2	0	0
0	6	0	0
0	5	0	0
0	6	0	0
0	2	0	0
0	4	0	0
0	2	0	0
0	1	0	0
0	2	0	0
NB	SB	EB	WB
0	48	0	0

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

Project ID: 17-4224-014 | **Day:** Monday

City: San Diego | **Date:** 6/12/2017

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2.5	0.5	2	3	0	0	0	0	1	0	1	
4:00 PM	0	331	36	340	526	0	0	0	0	15	0	1	1249
4:15 PM	0	331	30	258	481	0	0	0	0	23	0	1	1124
4:30 PM	0	311	37	319	508	0	0	0	0	21	0	1	1197
4:45 PM	0	357	31	245	441	0	0	0	0	19	0	2	1095
5:00 PM	1	390	30	271	448	0	0	0	0	18	0	4	1162
5:15 PM	0	420	31	203	439	0	0	0	0	21	0	1	1115
5:30 PM	0	350	19	208	426	0	0	0	0	13	0	1	1017
5:45 PM	0	391	23	212	403	0	0	0	0	16	0	3	1048

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2881	237	2056	3672	0	0	0	0	146	0	14	9007
APPROACH %'s :	0.03%	92.37%	7.60%	35.89%	64.11%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	91.25%	0.00%	8.75%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	1330	134	1162	1956	0	0	0	0	78	0	5	4665
PEAK HR FACTOR :		0.943			0.900			0.000			0.865		0.934

CONTROL : Signalized

UTURNS			
NB	SB	EB	WB
0	3	0	0
0	3	0	0
0	3	0	0
0	4	0	0
1	2	0	0
0	3	0	0
0	3	0	0
0	2	0	0

NB	SB	EB	WB
1	23	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4224-014 **Day:** Monday

City: San Diego **Date:** 6/12/2017

NOON

NS/EW Streets:	Harbor Dr			Harbor Dr			Laurel St			Laurel St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2.5	0.5	2	3	0	0	0	0	1	0	1	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	0 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.000

CONTROL : Signalized

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Harbor Dr and Laurel St , San Diego

Date: 6/12/2017

Day: Monday

Project #: 17-4224-014

City: San Diego

AM Peak Hour	845 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

CONTROL: Signalized

Southbound Approach (Harbor Dr)

	Right	Through	Left	Out
Lanes	0	3	2	
AM	0	1622	825	1926
NOON	0	0	0	0
PM	0	1956	1162	1335

Westbound Approach

	AM	NOON	PM	Lanes
Right	51	0	5	1
Through	0	0	0	0
Left	42	0	78	1
Out	879	0	1296	

Eastbound Approach (Laurel St)

	Lanes	AM	NOON	PM
Out		0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

Northbound Approach

	Out	Left	Through	Right
AM	1664	0	1875	54
NOON	0	0	0	0
PM	2034	0	1330	134
Lanes		0	2.5	0.5

Count Periods	Start	End
AM	7:00 AM	11:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	2447	1926
North Leg	NOON	0	0
North Leg	PM	3118	1335
South Leg	AM	1664	1929
South Leg	NOON	0	0
South Leg	PM	2034	1464

	AM	NOON	PM
West Leg	0	0	0
West Leg	0	0	0
East Leg	93	0	83
East Leg	879	0	1296

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	4373	0	4453
West Leg	0	0	0
East Leg	972	0	1379
South Leg	3593	0	3498

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers		
Location:	#03	File Name: ITM-19-093-03
Intersection:	Sea World Drive & Pacific Highway & East Mission Bay Drive	Project: LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019	Sea World

AM	Sea World Drive Southbound			Pacific Highway Westbound			Sea World Drive Northbound			East Mission Bay Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	19	131	27	5	18	7	20	234	13	21	7	12	514
7:15	24	174	34	4	30	21	30	217	15	14	6	16	585
7:30	29	158	43	6	34	16	39	271	12	13	1	17	639
7:45	40	171	44	16	40	20	63	253	14	14	9	18	702
8:00	33	185	43	6	20	13	52	237	20	17	11	21	658
8:15	32	187	33	17	23	19	40	252	14	15	4	22	658
8:30	19	162	59	6	17	16	69	277	7	21	9	22	684
8:45	32	185	47	13	13	13	63	252	8	11	8	22	667
Total	228	1353	330	73	195	125	376	1993	103	126	55	150	5107
Approach%	11.9	70.8	17.3	18.6	49.6	31.8	15.2	80.6	4.2	38.1	16.6	45.3	
Total%	4.5	26.5	6.5	1.4	3.8	2.4	7.4	39.0	2.0	2.5	1.1	2.9	

AM Intersection Peak Hour: **07:45 to 08:45**

Volume	124	705	179	45	100	68	224	1,019	55	67	33	83	2,702
Approach%	12.3	69.9	17.8	21.1	46.9	31.9	17.3	78.5	4.2	36.6	18.0	45.4	
Total%	4.6	26.1	6.6	1.7	3.7	2.5	8.3	37.7	2.0	2.5	1.2	3.1	
PHF			0.97			0.70			0.92			0.88	0.96

PM	Sea World Drive Southbound			Pacific Highway Westbound			Sea World Drive Northbound			East Mission Bay Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	28	295	29	31	12	22	34	265	20	39	24	47	846
16:15	34	255	45	22	21	26	39	246	17	33	32	68	838
16:30	29	292	48	44	18	45	30	313	32	42	31	57	981
16:45	31	283	62	36	23	39	38	309	35	52	22	54	984
17:00	39	259	44	51	12	47	66	238	33	36	39	59	923
17:15	41	357	39	30	14	35	45	270	24	39	44	74	1012
17:30	32	309	48	37	12	29	33	261	37	51	36	55	940
17:45	48	265	54	22	8	35	66	232	44	24	37	70	905
Total	282	2315	369	273	120	278	351	2134	242	316	265	484	7429
Approach%	9.5	78.1	12.4	40.7	17.9	41.4	12.9	78.3	8.9	29.7	24.9	45.4	
Total%	3.8	31.2	5.0	3.7	1.6	3.7	4.7	28.7	3.3	4.3	3.6	6.5	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	140	1,191	193	161	67	166	179	1,130	124	169	136	244	3,900
Approach%	9.2	78.1	12.7	40.9	17.0	42.1	12.5	78.9	8.7	30.8	24.8	44.4	
Total%	3.6	30.5	4.9	4.1	1.7	4.3	4.6	29.0	3.2	4.3	3.5	6.3	
PHF			0.87			0.90			0.94			0.87	0.96

Intersection Turning Movement - Bicycle & Pedestrian Count

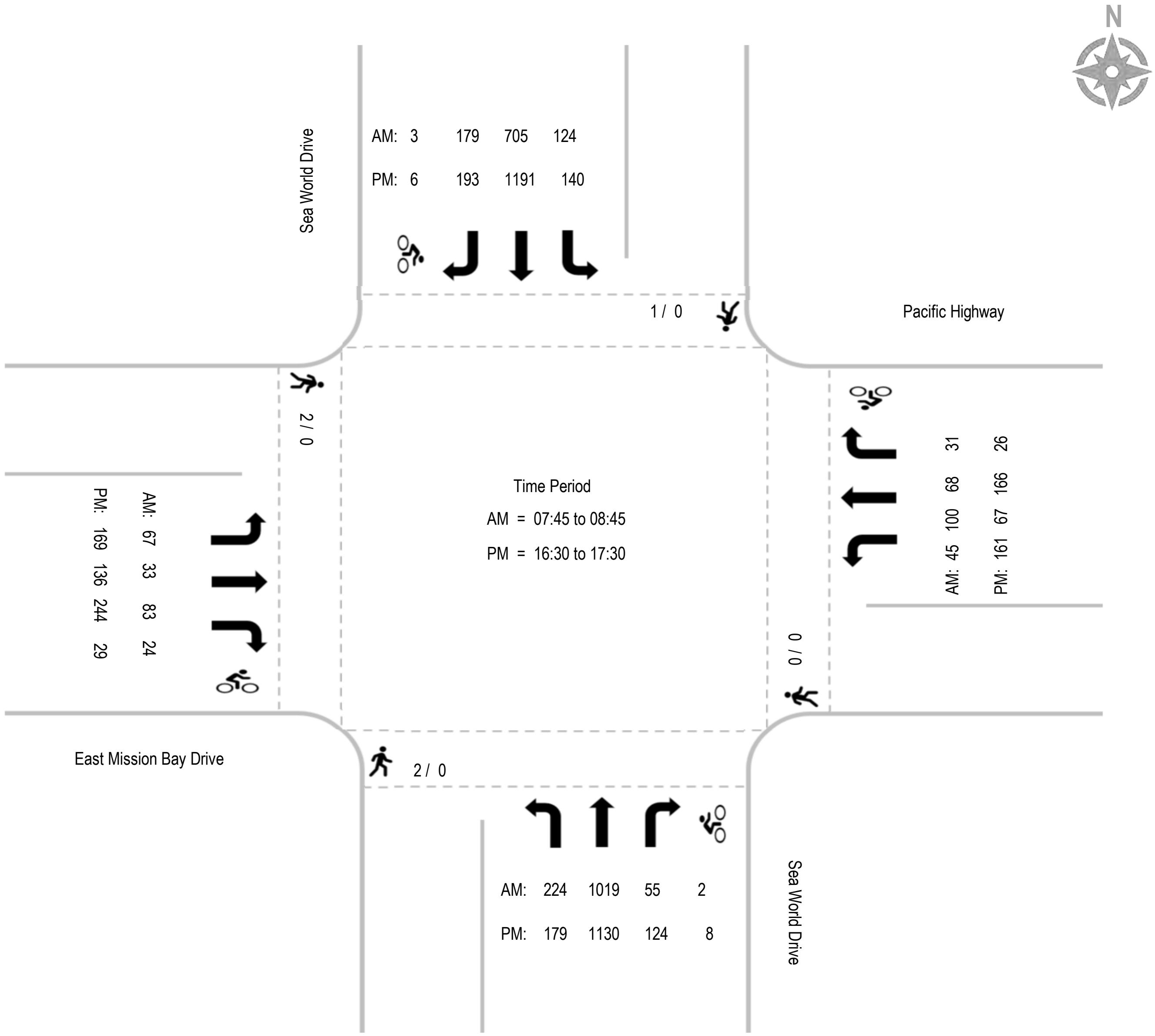
LINSCOTT LAW & GREENSPAN engineers			
Location:	#03	File Name:	ITM-19-093-03
Intersection:	Sea World Drive & Pacific Highway & East Mission Bay Drive	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World

AM	Sea World Drive Southbound				Pacific Highway Westbound				Sea World Drive Northbound				East Mission Bay Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	4
7:15	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	3	0	7
7:30	0	0	0	0	0	0	3	0	1	0	0	0	1	0	1	0	2	4
7:45	0	0	0	0	0	0	3	0	1	0	0	0	1	0	0	1	2	4
8:00	0	0	0	0	0	0	6	0	0	0	0	0	0	0	4	2	0	12
8:15	0	0	1	0	0	0	8	0	0	0	0	0	0	0	2	1	0	12
8:30	0	0	0	0	0	0	4	0	0	0	0	0	0	0	2	5	0	11
8:45	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	0	0	6
Ped Total	1				0				2				2				5	
Bike Total		0	1	2		1	30	0		1	1	0		0	10	14		60

PM	Sea World Drive Southbound				Pacific Highway Westbound				Sea World Drive Northbound				East Mission Bay Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	0	5
16:15	0	0	0	0	0	1	1	0	0	1	0	0	0	0	2	1	0	6
16:30	0	1	0	0	0	0	3	0	0	1	2	1	0	0	2	0	0	10
16:45	0	0	1	0	0	0	3	0	0	0	1	0	0	0	2	1	0	8
17:00	0	0	0	0	0	1	2	1	0	0	0	0	0	0	5	0	0	9
17:15	0	0	1	0	0	1	5	0	0	0	1	0	0	1	1	2	0	12
17:30	0	0	0	1	0	0	4	0	0	0	0	0	0	0	2	1	0	8
17:45	0	0	1	1	0	0	1	2	0	0	0	0	0	0	4	2	0	11
Ped Total	0				0				0				0				0	
Bike Total		1	3	2		4	19	3		2	4	2		2	19	8		69

Intersection Turning Movement - Peak Hour Summary

Location:	#03	File Name:	ITM-19-093-03
Intersection:	Sea World Drive & Pacific Highway & East Mission Bay Drive	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#02	File Name:	ITM-19-093-02
Intersection:	Sea World Drive & I-5 Southbound Ramps	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World

AM	I-5 Southbound Off Ramp Southbound			Sea World Drive Westbound			I-5 Southbound On Ramp Northbound			Sea World Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	29	0	128	60	56	0	0	0	0	0	235	18	526
7:15	39	0	169	61	64	0	0	0	0	0	276	13	622
7:30	39	0	165	76	77	0	0	0	0	0	303	14	674
7:45	48	0	183	63	50	0	0	0	0	0	266	14	624
8:00	51	0	150	58	76	0	0	0	0	0	224	10	569
8:15	51	0	175	48	88	0	0	0	0	0	215	6	583
8:30	75	0	149	66	99	0	0	0	0	0	264	13	666
8:45	50	0	141	66	72	0	0	0	0	0	208	19	556
Total	382	0	1260	498	582	0	0	0	0	0	1991	107	4820
Approach%	23.3	-	76.7	46.1	53.9	-	-	-	-	-	94.9	5.1	
Total%	7.9	-	26.1	10.3	12.1	-	-	-	-	-	41.3	2.2	

AM Intersection Peak Hour: **07:15 to 08:15**

Volume	177	-	667	258	267	-	-	-	-	-	1,069	51	2,489
Approach%	21.0	-	79.0	49.1	50.9	-	-	-	-	-	95.4	4.6	
Total%	7.1	-	26.8	10.4	10.7	-	-	-	-	-	42.9	2.0	
PHF			0.91			0.86			#DIV/0!			0.88	0.92

PM	I-5 Southbound Off Ramp Southbound			Sea World Drive Westbound			I-5 Southbound On Ramp Northbound			Sea World Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	49	0	245	38	104	0	0	0	0	0	256	51	743
16:15	46	0	212	32	120	0	0	0	0	0	286	41	737
16:30	38	0	225	42	131	0	0	0	0	0	241	35	712
16:45	48	0	240	46	125	0	0	0	0	0	279	50	788
17:00	40	0	223	69	92	0	0	0	0	0	244	47	715
17:15	30	0	260	45	136	0	0	0	0	0	235	51	757
17:30	31	0	242	38	142	0	0	0	0	0	241	52	746
17:45	46	0	277	55	103	0	0	0	0	0	212	59	752
Total	328	0	1924	365	953	0	0	0	0	0	1994	386	5950
Approach%	14.6	-	85.4	27.7	72.3	-	-	-	-	-	83.8	16.2	
Total%	5.5	-	32.3	6.1	16.0	-	-	-	-	-	33.5	6.5	

PM Intersection Peak Hour: **16:45 to 17:45**

Volume	149	-	965	198	495	-	-	-	-	-	999	200	3,006
Approach%	13.4	-	86.6	28.6	71.4	-	-	-	-	-	83.3	16.7	
Total%	5.0	-	32.1	6.6	16.5	-	-	-	-	-	33.2	6.7	
PHF			0.96			0.96			#DIV/0!			0.91	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers	Location:	#02	File Name:	ITM-19-093-02
	Intersection:	Sea World Drive & I-5 Southbound Ramps	Project:	LLG Ref. 3-96-0691
	Date of Count:	Wednesday, August 14, 2019		Sea World

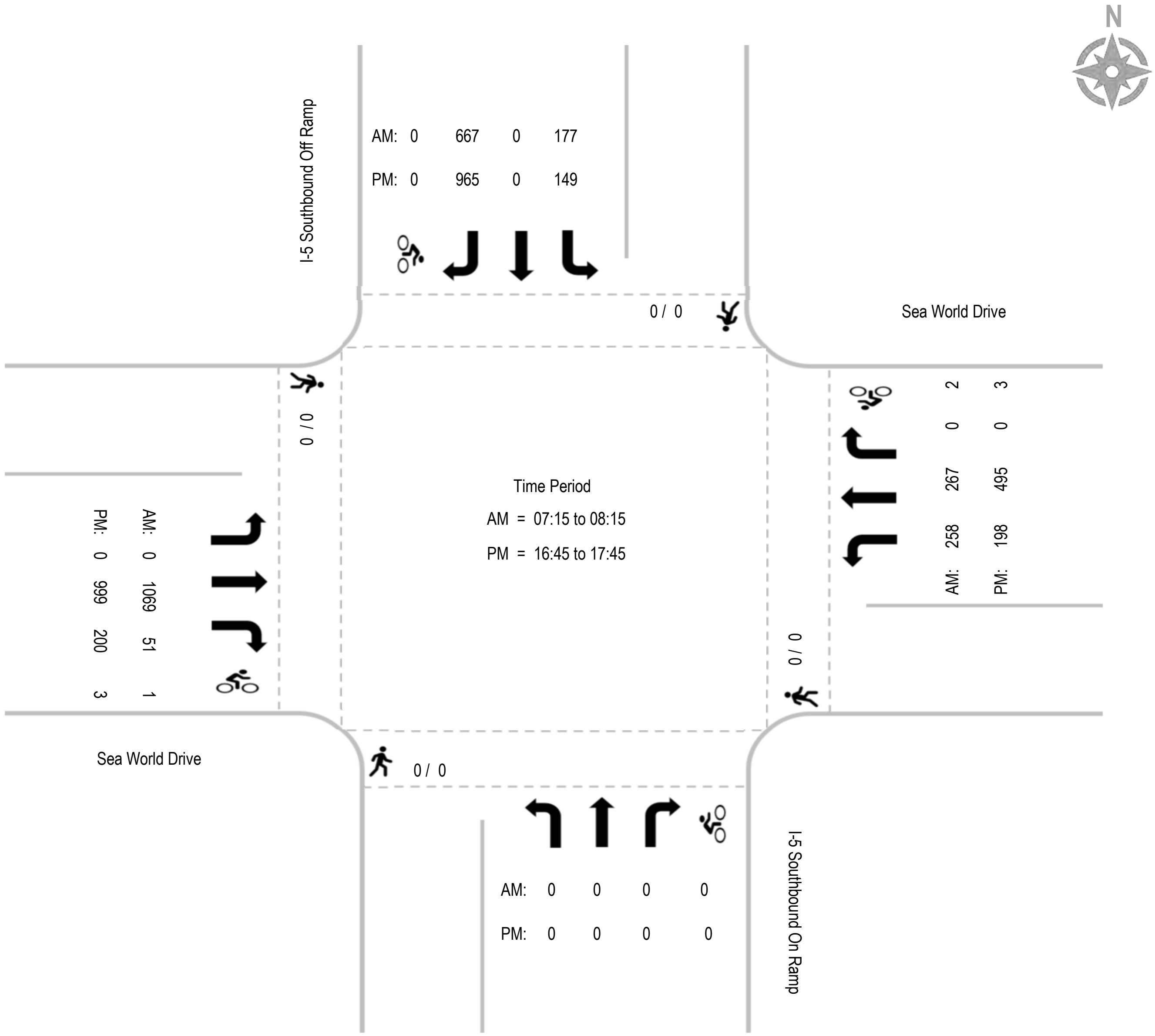
AM	I-5 Southbound Off Ramp Southbound				Sea World Drive Westbound				I-5 Southbound On Ramp Northbound				Sea World Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	2	0		0	0	0		0	1	0		3

PM	I-5 Southbound Off Ramp Southbound				Sea World Drive Westbound				I-5 Southbound On Ramp Northbound				Sea World Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		1	2	0		0	0	0		0	3	0		6

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#02	File Name:	ITM-19-093-02
Intersection:	Sea World Drive & I-5 Southbound Ramps	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World



Report Generated by Bearcat Enterprises LLC, DBA "Count Data" | 619-987-5136 | info@yourcountdata.com

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-19-093-01
Intersection:	Sea World Drive & I-5 Northbound Ramps	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World

AM	I-5 Northbound On Ramp Southbound			Sea World Drive Westbound			I-5 Northbound Off Ramp Northbound			Sea World Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	66	71	38	3	76	195	52	0	501
7:15	0	0	0	0	82	85	40	0	74	214	81	0	576
7:30	0	0	0	0	92	84	51	2	57	233	90	0	609
7:45	0	0	0	0	67	71	54	4	96	219	112	0	623
8:00	0	0	0	0	95	66	60	1	81	199	112	0	614
8:15	0	0	0	0	91	60	49	1	87	198	103	0	589
8:30	0	0	0	0	97	68	70	3	77	204	129	0	648
8:45	0	0	0	0	106	58	66	5	102	192	105	0	634
Total	0	0	0	0	696	563	428	19	650	1654	784	0	4794
Approach%	-	-	-	-	55.3	44.7	39.0	1.7	59.3	67.8	32.2	-	
Total%	-	-	-	-	14.5	11.7	8.9	0.4	13.6	34.5	16.4	-	

AM Intersection Peak Hour: **08:00 to 09:00**

Volume	-	-	-	-	389	252	245	10	347	793	449	-	2,485
Approach%	-	-	-	-	60.7	39.3	40.7	1.7	57.6	63.8	36.2	-	
Total%	-	-	-	-	15.7	10.1	9.9	0.4	14.0	31.9	18.1	-	
PHF			#DIV/0!			0.97			0.87			0.93	0.96

PM	I-5 Northbound On Ramp Southbound			Sea World Drive Westbound			I-5 Northbound Off Ramp Northbound			Sea World Drive Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	0	83	82	74	0	125	169	117	0	650
16:15	0	0	0	0	84	85	64	0	119	210	95	0	657
16:30	0	0	0	0	90	70	68	2	123	201	123	0	677
16:45	0	0	0	0	98	77	71	1	121	189	130	0	687
17:00	0	0	0	0	121	86	52	1	124	182	110	0	676
17:15	0	0	0	0	120	82	69	0	139	181	100	0	691
17:30	0	0	0	0	103	85	84	0	106	195	81	0	654
17:45	0	0	0	0	95	69	57	0	112	159	100	0	592
Total	0	0	0	0	794	636	539	4	969	1486	856	0	5284
Approach%	-	-	-	-	55.5	44.5	35.6	0.3	64.1	63.5	36.5	-	
Total%	-	-	-	-	15.0	12.0	10.2	0.1	18.3	28.1	16.2	-	

PM Intersection Peak Hour: **16:30 to 17:30**

Volume	-	-	-	-	429	315	260	4	507	753	463	-	2,731
Approach%	-	-	-	-	57.7	42.3	33.7	0.5	65.8	61.9	38.1	-	
Total%	-	-	-	-	15.7	11.5	9.5	0.1	18.6	27.6	17.0	-	
PHF			#DIV/0!			0.90			0.93			0.94	0.99

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-19-093-01
Intersection:	Sea World Drive & I-5 Northbound Ramps	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World

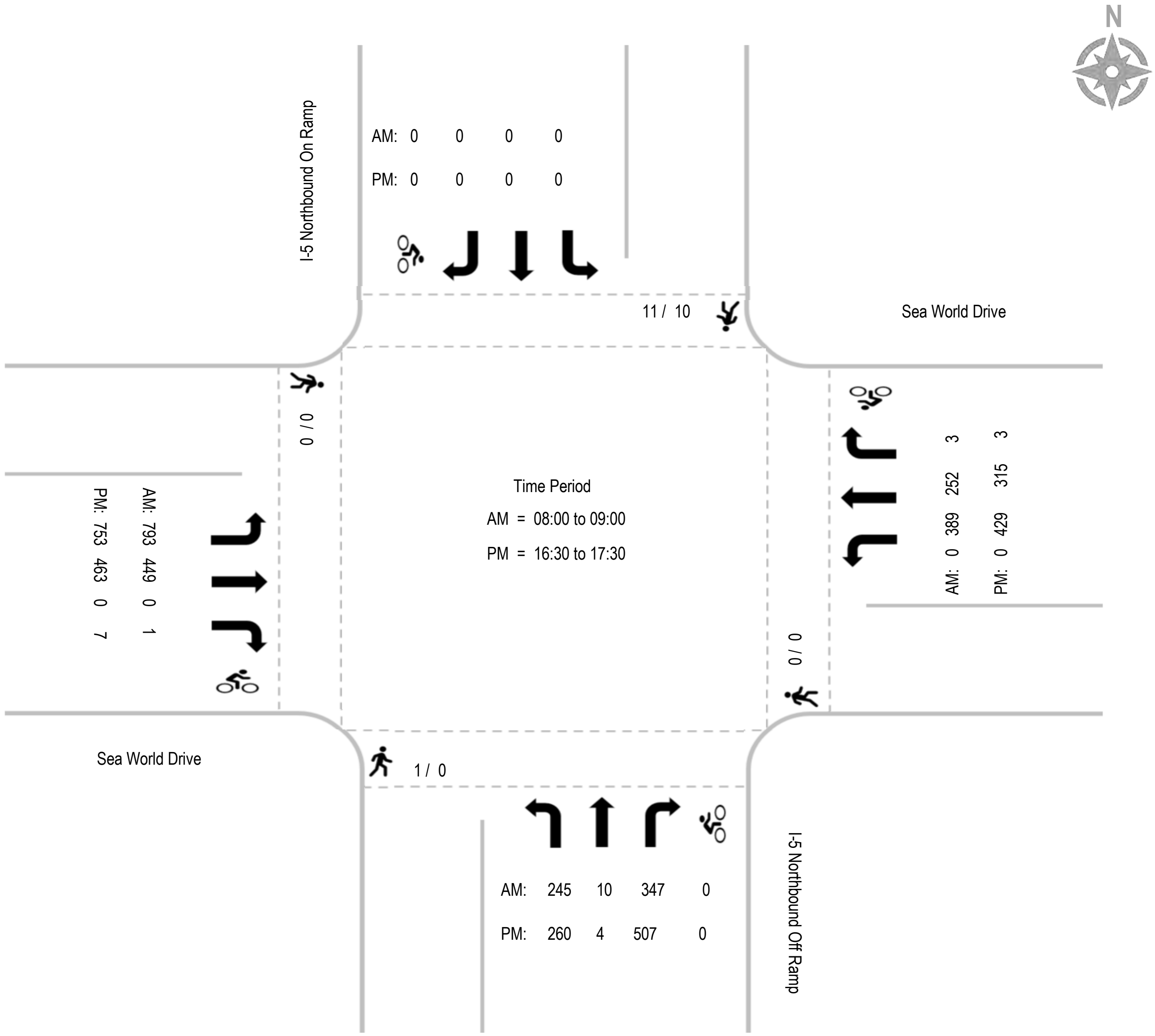
AM	I-5 Northbound On Ramp Southbound				Sea World Drive Westbound				I-5 Northbound Off Ramp Northbound				Sea World Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	1
7:30	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1
7:45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
8:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:15	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1
8:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Ped Total	11				0				1				0				12	
Bike Total		0	0	0		0	3	0		0	0	0		0	1	0		4

PM	I-5 Northbound On Ramp Southbound				Sea World Drive Westbound				I-5 Northbound Off Ramp Northbound				Sea World Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
16:15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1
16:30	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1
17:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
17:30	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
17:45	3	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	3
Ped Total	10				0				0				0				10	
Bike Total		0	0	0		0	3	0		0	0	0		0	7	0		10

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-19-093-01
Intersection:	Sea World Drive & I-5 Northbound Ramps	Project:	LLG Ref. 3-96-0691
Date of Count:	Wednesday, August 14, 2019		Sea World



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	MISSION VALLEY - SAN DIEGO	PROJECT #:	PTD17-0908-02
9/6/17	NORTH & SOUTH:	Morena Blvd.	LOCATION #:	10
WEDNESDAY	EAST & WEST:	Linda Vista Rd	CONTROL:	SIGNAL

NOTES:

INCLUDE BIKE / PED

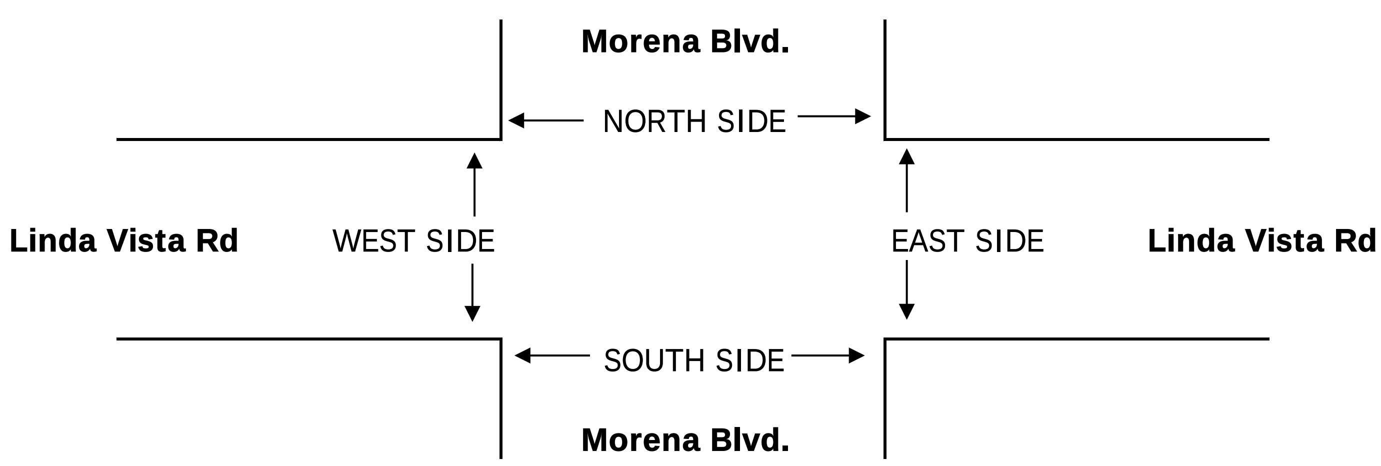
AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

		NORTHBOUND Morena Blvd.			SOUTHBOUND Morena Blvd.			EASTBOUND Linda Vista Rd			WESTBOUND Linda Vista Rd			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	2	1	X	2	X	X	X	X	2	X	1	
AM	7:00 AM		166	136		49					149		1	501
AM	7:15 AM		239	177		85					134		1	636
AM	7:30 AM		249	196		81					163		1	690
AM	7:45 AM		276	217		97					200		2	792
AM	8:00 AM		221	213		106					157		1	698
AM	8:15 AM		285	276		94					134		0	789
AM	8:30 AM		280	259		93					203		3	838
AM	8:45 AM		250	213		108					159		1	731
AM	VOLUMES	0	1,966	1,687	0	713	0	0	0	0	1,299	0	10	5,675
AM	APPROACH %	0%	54%	46%	0%	100%	0%	0%	0%	0%	99%	0%	1%	
AM	APP/DEPART	3,653	/	1,976	713	/	2,012	0	/	1,687	1,309	/	0	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	0	1,062	965	0	390	0	0	0	0	694	0	6	3,117
AM	APPROACH %	0%	52%	48%	0%	100%	0%	0%	0%	0%	99%	0%	1%	
AM	PEAK HR FACTOR		0.903			0.920			0.000			0.850		0.930
AM	APP/DEPART	2,027	/	1,068	390	/	1,084	0	/	965	700	/	0	0
PM	4:00 PM		96	202		300					228		4	830
PM	4:15 PM		92	206		235					195		10	738
PM	4:30 PM		108	198		315					215		4	840
PM	4:45 PM		95	166		296					225		5	787
PM	5:00 PM		91	198		302					253		2	846
PM	5:15 PM		96	222		306					263		2	889
PM	5:30 PM		83	190		309					251		3	836
PM	5:45 PM		81	170		299					240		3	793
PM	VOLUMES	0	742	1,552	0	2,362	0	0	0	0	1,870	0	33	6,559
PM	APPROACH %	0%	32%	68%	0%	100%	0%	0%	0%	0%	98%	0%	2%	
PM	APP/DEPART	2,294	/	775	2,362	/	4,232	0	/	1,552	1,903	/	0	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	0	351	780	0	1,216	0	0	0	0	1,007	0	10	3,364
PM	APPROACH %	0%	31%	69%	0%	100%	0%	0%	0%	0%	99%	0%	1%	
PM	PEAK HR FACTOR		0.889			0.984			0.000			0.959		0.946
PM	APP/DEPART	1,131	/	361	1,216	/	2,223	0	/	780	1,017	/	0	0

U-TURNS

		NB	SB	EB	WB	TTL
		X	X	X	X	
AM	7:00 AM					0
AM	7:15 AM					0
AM	7:30 AM					0
AM	7:45 AM					0
AM	8:00 AM					0
AM	8:15 AM					0
AM	8:30 AM					0
AM	8:45 AM					0
AM	VOLUMES	0	0	0	0	0
PM	4:00 PM					0
PM	4:15 PM					0
PM	4:30 PM					0
PM	4:45 PM					0
PM	5:00 PM					0
PM	5:15 PM					0
PM	5:30 PM					0
PM	5:45 PM					0
PM	VOLUMES	0	0	0	0	0



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM			4		4					0					0
AM	7:15 AM	3				3					0					0
AM	7:30 AM					0					0	1				1
AM	7:45 AM			3		3					0					0
AM	8:00 AM	1		2		3					0	1				1
AM	8:15 AM			4		4					0					0
AM	8:30 AM			1		1					0					0
AM	8:45 AM	2		2		4					0					0
AM	TOTAL	6	0	16	0	22	0	0	0	0	0	2	0	0	0	2
PM	4:00 PM	1		5		6					0			1		1
PM	4:15 PM			4		4					0					0
PM	4:30 PM			5		5					0					0
PM	4:45 PM			3		3					0					0
PM	5:00 PM			3		3					0					0
PM	5:15 PM			2		2					0					0
PM	5:30 PM			2		2					0			1		1
PM	5:45 PM	1		3		4					0			1		1
PM	TOTAL	2	0	27	0	29	0	0	0	0	0	0	0	3	0	3

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Rosecrans St, between Dewey Rd and Lytton St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **52334** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
148	169	334	973	1714	2342	2756	3135	2942	2993	3035	2988	3249	3334	3849	4317	3730	2892	2224	1689	1231	922	843	525
46	33	45	136	323	543	629	726	735	731	803	675	797	853	850	1023	1105	744	574	473	358	268	285	153
39	30	70	188	452	609	658	756	692	742	708	825	790	813	946	990	1033	745	561	440	339	234	228	139
30	53	100	271	442	608	747	784	745	745	760	726	809	879	994	1135	809	736	525	433	279	197	181	132
33	53	119	378	497	582	722	869	770	775	764	762	853	789	1059	1169	783	667	564	343	255	223	149	101

Date: **Thursday, January 23, 2020** Total Daily Volume: **27323** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
108	65	47	57	153	311	761	1469	1626	1432	1411	1713	1823	1661	2287	2726	2431	2011	1559	1191	903	721	528	329
43	18	15	12	25	57	150	273	400	418	347	385	442	450	467	645	784	499	412	345	265	210	192	100
29	19	14	13	30	70	179	350	403	368	365	482	478	391	534	624	670	531	390	299	250	178	146	77
16	18	11	14	38	92	210	387	422	335	338	418	453	459	621	704	481	516	355	312	193	154	109	81
20	10	7	18	60	92	222	459	401	311	361	428	450	361	665	753	496	465	402	235	195	179	81	71

Date: **Thursday, January 23, 2020** Total Daily Volume: **25011** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
40	104	287	916	1561	2031	1995	1666	1316	1561	1624	1275	1426	1673	1562	1591	1299	881	665	498	328	201	315	196
3	15	30	124	298	486	479	453	335	313	456	290	355	403	383	378	321	245	162	128	93	58	93	53
10	11	56	175	422	539	479	406	289	374	343	343	312	422	412	366	363	214	171	141	89	56	82	62
14	35	89	257	404	516	537	397	323	410	422	308	356	420	373	431	328	220	170	121	86	43	72	51
13	43	112	360	437	490	500	410	369	464	403	334	403	428	394	416	287	202	162	108	60	44	68	30

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Rosecrans St, between Lytton St and Midway Dr**

Date: **Thursday, January 23, 2020** Total Daily Volume: **51905** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
217	121	75	116	320	874	1956	3123	3369	3054	2739	3288	3510	3763	3635	4364	4331	3718	2984	2148	1739	1206	782	473
84	27	18	26	38	127	322	693	841	847	685	689	906	886	809	1024	1111	832	836	628	435	355	290	146
48	31	22	13	70	174	476	806	835	767	678	865	814	970	821	1059	1114	947	779	530	499	333	213	105
49	18	18	33	101	240	518	783	861	745	667	856	881	934	942	1101	1090	993	646	512	392	257	156	105
36	45	17	44	111	333	640	841	832	695	709	878	909	973	1063	1180	1016	946	723	478	413	261	123	117

Date: **Thursday, January 23, 2020** Total Daily Volume: **28119** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
123	58	44	54	126	274	680	1334	1590	1493	1429	1731	1927	2415	2214	2716	2770	1932	1589	1196	1005	668	464	287
45	10	13	14	18	45	121	249	391	414	345	360	482	533	436	649	710	405	515	355	258	206	188	93
30	15	14	9	29	62	168	336	398	376	347	508	440	631	500	667	697	555	385	278	292	171	125	60
28	12	10	10	35	84	181	355	396	361	361	425	487	628	585	640	738	479	313	301	208	143	84	63
20	21	7	21	44	83	210	394	405	342	376	438	518	623	693	760	625	493	376	262	247	148	67	71

Date: **Thursday, January 23, 2020** Total Daily Volume: **23786** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
94	63	31	62	194	600	1276	1789	1779	1561	1310	1557	1583	1348	1421	1648	1561	1786	1395	952	734	538	318	186
39	17	5	12	20	82	201	444	450	433	340	329	424	353	373	375	401	427	321	273	177	149	102	53
18	16	8	4	41	112	308	470	437	391	331	357	374	339	321	392	417	392	394	252	207	162	88	45
21	6	8	23	66	156	337	428	465	384	306	431	394	306	357	461	352	514	333	211	184	114	72	42
16	24	10	23	67	250	430	447	427	353	333	440	391	350	370	420	391	453	347	216	166	113	56	46

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Rosecrans St, between Midway Dr and Sports Arena Blvd**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **59414** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
285	195	175	167	393	1039	2308	3571	3642	3336	3292	3895	4065	4056	4259	4410	4443	4327	3773	2689	2184	1527	853	530
92	40	48	33	61	153	445	828	835	873	773	903	1029	1077	1035	1166	1101	1135	983	768	563	472	282	176
68	53	46	23	64	192	531	925	952	813	827	932	1022	1040	1070	1107	1094	1175	978	703	553	360	220	144
66	49	39	40	116	288	596	915	942	801	802	1005	1001	1042	1058	1059	1112	1039	884	661	562	399	165	109
59	53	42	71	152	406	736	903	913	849	890	1055	1013	897	1096	1078	1136	978	928	557	506	296	186	101

Date: **Wednesday, January 29, 2020** Total Daily Volume: **30192** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
138	98	92	77	157	358	821	1530	1629	1582	1680	1979	2160	2237	2327	2499	2400	2276	1877	1359	1223	926	471	296
49	12	22	17	21	60	179	331	349	391	402	435	504	577	578	683	594	592	469	387	315	308	169	97
27	29	28	12	24	77	158	400	426	373	387	491	528	576	563	607	603	645	504	342	286	221	117	79
30	28	20	18	51	89	227	396	445	401	438	523	558	565	577	588	609	555	459	325	302	229	81	59
32	29	22	30	61	132	257	403	409	417	453	530	570	519	609	621	594	484	445	305	320	168	104	61

Date: **Wednesday, January 29, 2020** Total Daily Volume: **29222** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
147	97	83	90	236	681	1487	2041	2013	1754	1612	1916	1905	1819	1932	1911	2043	2051	1896	1330	961	601	382	234
43	28	26	16	40	93	266	497	486	482	371	468	525	500	457	483	507	543	514	381	248	164	113	79
41	24	18	11	40	115	373	525	526	440	440	441	494	464	507	500	491	530	474	361	267	139	103	65
36	21	19	22	65	199	369	519	497	400	364	482	443	477	481	471	503	484	425	336	260	170	84	50
27	24	20	41	91	274	479	500	504	432	437	525	443	378	487	457	542	494	483	252	186	128	82	40

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Rosecrans St, between Sports Arena Blvd and Kurtz St**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **21875** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
114	57	50	34	99	179	478	970	1011	1058	1283	1710	1915	1810	1620	1848	1795	1746	1270	1004	738	602	293	191
29	26	14	9	13	21	83	188	242	231	289	366	430	492	406	415	495	453	370	264	213	141	88	53
37	11	9	8	12	36	95	246	255	293	325	387	522	451	393	464	440	459	321	268	192	164	103	52
19	10	13	7	39	50	131	268	261	296	309	485	445	453	422	478	431	434	312	262	160	172	53	45
29	10	14	10	35	72	169	268	253	238	360	472	518	414	399	491	429	400	267	210	173	125	49	41

Date: **Wednesday, January 29, 2020** Total Daily Volume: **14109** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
63	37	33	20	61	102	249	616	573	645	824	1016	1196	1185	1079	1228	1226	1090	828	719	536	426	214	143
17	17	9	6	7	14	37	108	132	141	192	238	246	316	281	302	349	280	230	196	164	104	66	42
17	8	7	6	4	21	48	158	147	189	221	233	345	302	239	297	302	286	206	196	129	118	80	36
12	6	9	5	25	23	73	173	140	178	185	269	268	288	303	318	277	281	221	174	116	117	34	35
17	6	8	3	25	44	91	177	154	137	226	276	337	279	256	311	298	243	171	153	127	87	34	30

Date: **Wednesday, January 29, 2020** Total Daily Volume: **7766** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
51	20	17	14	38	77	229	354	438	413	459	694	719	625	541	620	569	656	442	285	202	176	79	48
12	9	5	3	6	7	46	80	110	90	97	128	184	176	125	113	146	173	140	68	49	37	22	11
20	3	2	2	8	15	47	88	108	104	104	154	177	149	154	167	138	173	115	72	63	46	23	16
7	4	4	2	14	27	58	95	121	118	124	216	177	165	119	160	154	153	91	88	44	55	19	10
12	4	6	7	10	28	78	91	99	101	134	196	181	135	143	180	131	157	96	57	46	38	15	11

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Rosecrans St, between Kurtz St and Pacific Hwy**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **13689** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
72	45	35	28	55	116	311	638	703	706	804	956	1097	1101	1059	1180	1280	1129	748	557	427	347	184	111
21	19	8	3	7	10	47	129	168	170	192	212	269	296	257	269	348	323	217	134	124	82	56	33
25	10	5	6	13	19	62	145	197	180	220	240	266	261	239	302	312	312	187	144	116	92	64	29
11	8	11	10	13	38	96	197	175	198	167	260	291	276	273	287	332	263	186	157	98	94	32	23
15	8	11	9	22	49	106	167	163	158	225	244	271	268	290	322	288	231	158	122	89	79	32	26

Date: **Wednesday, January 29, 2020** Total Daily Volume: **8256** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
44	25	23	19	32	59	169	366	378	382	458	537	630	662	648	757	834	699	474	364	275	228	114	79
16	9	7	2	5	6	26	74	86	93	113	129	140	173	155	182	233	194	132	87	79	60	34	25
15	7	4	6	4	9	30	76	111	96	125	131	172	164	136	191	212	189	121	97	72	58	42	18
3	4	7	6	9	16	51	122	94	110	95	146	155	171	183	194	199	165	120	98	63	59	20	16
10	5	5	5	14	28	62	94	87	83	125	131	163	154	174	190	190	151	101	82	61	51	18	20

Date: **Wednesday, January 29, 2020** Total Daily Volume: **5433** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
28	20	12	9	23	57	142	272	325	324	346	419	467	439	411	423	446	430	274	193	152	119	70	32
5	10	1	1	2	4	21	55	82	77	79	83	129	123	102	87	115	129	85	47	45	22	22	8
10	3	1	0	9	10	32	69	86	84	95	109	94	97	103	111	100	123	66	47	44	34	22	11
8	4	4	4	4	22	45	75	81	88	72	114	136	105	90	93	133	98	66	59	35	35	12	7
5	3	6	4	8	21	44	73	76	75	100	113	108	114	116	132	98	80	57	40	28	28	14	6

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Taylor St, between Pacific Hwy and Congress St**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **18603** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
88	53	51	54	88	304	645	1049	1060	890	948	1117	1185	1252	1353	1811	1839	1791	1025	672	538	420	231	139
29	27	15	7	11	33	128	250	268	254	237	276	325	320	318	402	485	473	320	163	151	101	75	55
24	4	12	9	12	51	127	241	297	218	229	264	269	324	342	477	345	434	252	198	136	105	74	32
12	11	13	22	32	89	169	285	256	215	236	294	322	327	320	456	461	480	235	156	130	122	35	31
23	11	11	16	33	131	221	273	239	203	246	283	269	281	373	476	548	404	218	155	121	92	47	21

Date: **Wednesday, January 29, 2020** Total Daily Volume: **10939** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
53	34	32	24	30	83	191	405	474	434	540	627	672	765	869	1223	1315	1241	686	423	330	266	141	81
21	19	7	5	5	10	35	76	101	118	119	167	170	170	205	274	355	310	225	99	106	69	46	29
16	2	7	2	5	14	30	103	129	104	145	137	172	220	213	314	247	312	166	130	82	64	46	16
5	5	12	6	5	23	53	120	130	102	130	153	171	209	224	320	322	341	153	91	68	66	24	24
11	8	6	11	15	36	73	106	114	110	146	170	159	166	227	315	391	278	142	103	74	67	25	12

Date: **Wednesday, January 29, 2020** Total Daily Volume: **7664** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
35	19	19	30	58	221	454	644	586	456	408	490	513	487	484	588	524	550	339	249	208	154	90	58
8	8	8	2	6	23	93	174	167	136	118	109	155	150	113	128	130	163	95	64	45	32	29	26
8	2	5	7	7	37	97	138	168	114	84	127	97	104	129	163	98	122	86	68	54	41	28	16
7	6	1	16	27	66	116	165	126	113	106	141	151	118	96	136	139	139	82	65	62	56	11	7
12	3	5	5	18	95	148	167	125	93	100	113	110	115	146	161	157	126	76	52	47	25	22	9

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Taylor St, between Congress St and Juan St**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **15530** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
72	39	42	44	71	281	551	895	913	738	781	857	962	989	1042	1478	1506	1485	935	601	519	392	214	123
25	12	14	8	7	30	104	198	244	206	200	214	240	252	250	327	385	381	274	168	147	102	69	46
19	6	8	6	10	58	113	205	250	183	182	212	238	255	254	405	305	373	242	156	122	100	65	31
13	12	10	9	26	85	143	257	213	177	211	213	269	247	267	364	385	388	211	141	135	113	38	27
15	9	10	21	28	108	191	235	206	172	188	218	215	235	271	382	431	343	208	136	115	77	42	19

Date: **Wednesday, January 29, 2020** Total Daily Volume: **9042** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
43	22	26	25	23	73	145	323	342	336	432	474	532	598	672	1056	1116	1020	597	372	353	255	134	73
16	6	5	7	3	9	25	61	85	93	102	122	123	129	162	227	292	257	193	105	108	73	44	26
14	4	6	3	5	17	27	68	99	73	112	116	150	160	157	300	227	253	141	105	80	59	40	13
8	6	9	3	3	21	38	111	91	86	115	115	143	164	179	261	285	274	130	78	89	71	23	22
5	6	6	12	12	26	55	83	67	84	103	121	116	145	174	268	312	236	133	84	76	52	27	12

Date: **Wednesday, January 29, 2020** Total Daily Volume: **6488** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
29	17	16	19	48	208	406	572	571	402	349	383	430	391	370	422	390	465	338	229	166	137	80	50
9	6	9	1	4	21	79	137	159	113	98	92	117	123	88	100	93	124	81	63	39	29	25	20
5	2	2	3	5	41	86	137	151	110	70	96	88	95	97	105	78	120	101	51	42	41	25	18
5	6	1	6	23	64	105	146	122	91	96	98	126	83	88	103	100	114	81	63	46	42	15	5
10	3	4	9	16	82	136	152	139	88	85	97	99	90	97	114	119	107	75	52	39	25	15	7

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Taylor St, between Juan St and Presidio Dr**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **14928** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
75	39	32	30	63	249	569	907	937	692	673	788	865	862	907	1528	1712	1560	834	551	466	289	199	101
21	15	14	5	8	28	119	203	252	192	167	185	216	215	213	287	349	536	233	143	123	83	73	29
23	8	5	3	9	57	124	202	223	165	151	187	191	215	239	371	368	394	235	159	109	75	62	34
11	9	5	5	24	72	140	259	231	179	178	207	235	208	219	518	371	317	188	138	115	83	31	22
20	7	8	17	22	92	186	243	231	156	177	209	223	224	236	352	624	313	178	111	119	48	33	16

Date: **Wednesday, January 29, 2020** Total Daily Volume: **8110** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
31	15	16	17	14	31	97	208	236	216	269	351	380	423	552	1199	1409	1224	515	307	260	175	118	47
9	6	7	3	3	1	18	44	63	60	56	84	108	97	121	208	271	451	151	78	76	53	52	16
9	5	4	2	4	8	20	46	62	49	67	82	72	108	142	282	299	309	153	88	52	43	31	14
6	2	2	2	2	10	23	65	55	57	73	95	105	106	139	440	306	241	109	77	65	58	19	10
7	2	3	10	5	12	36	53	56	50	73	90	95	112	150	269	533	223	102	64	67	21	16	7

Date: **Wednesday, January 29, 2020** Total Daily Volume: **6818** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
44	24	16	13	49	218	472	699	701	476	404	437	485	439	355	329	303	336	319	244	206	114	81	54
12	9	7	2	5	27	101	159	189	132	111	101	108	118	92	79	78	85	82	65	47	30	21	13
14	3	1	1	5	49	104	156	161	116	84	105	119	107	97	89	69	85	82	71	57	32	31	20
5	7	3	3	22	62	117	194	176	122	105	112	130	102	80	78	65	76	79	61	50	25	12	12
13	5	5	7	17	80	150	190	175	106	104	119	128	112	86	83	91	90	76	47	52	27	17	9

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Taylor St, between Presidio Dr and I-8 Eastbound Ramp**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **14757** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
79	40	31	30	57	261	583	925	933	749	756	819	912	934	951	1353	1368	1401	875	577	490	320	207	106
22	15	13	4	6	29	118	203	249	200	178	207	223	227	206	294	349	379	250	157	130	86	71	32
25	8	6	4	8	58	134	217	232	194	179	209	200	244	234	363	344	351	241	156	115	82	67	36
10	10	4	5	22	71	139	249	225	186	189	198	243	215	257	333	326	341	194	142	125	93	37	21
22	7	8	17	21	103	192	256	227	169	210	205	246	248	254	363	349	330	190	122	120	59	32	17

Date: **Wednesday, January 29, 2020** Total Daily Volume: **7626** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
35	15	13	17	13	40	115	253	249	256	311	346	384	417	574	1033	1062	1033	516	310	271	194	120	49
11	6	6	2	3	1	24	46	65	68	67	86	102	89	113	208	254	300	159	84	79	50	47	17
11	4	4	3	4	8	28	60	68	58	85	92	72	117	138	260	275	262	152	83	51	48	38	15
4	2	1	2	2	12	26	81	57	59	79	82	106	99	160	272	252	248	102	80	75	68	19	11
9	3	2	10	4	19	37	66	59	71	80	86	104	112	163	293	281	223	103	63	66	28	16	6

Date: **Wednesday, January 29, 2020** Total Daily Volume: **7131** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
44	25	18	13	44	221	468	672	684	493	445	473	528	517	377	320	306	368	359	267	219	126	87	57
11	9	7	2	3	28	94	157	184	132	111	121	121	138	93	86	95	79	91	73	51	36	24	15
14	4	2	1	4	50	106	157	164	136	94	117	128	127	96	103	69	89	89	73	64	34	29	21
6	8	3	3	20	59	113	168	168	127	110	116	137	116	97	61	74	93	92	62	50	25	18	10
13	4	6	7	17	84	155	190	168	98	130	119	142	136	91	70	68	107	87	59	54	31	16	11

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Hotel Circle S, between I-8 Eastbound Ramp and Bachman Pl**

Date: **Thursday, January 23, 2020** Total Daily Volume: **7504** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
43	19	6	15	50	106	200	417	419	336	337	378	393	387	432	672	703	809	544	390	312	262	185	89
6	4	2	6	11	8	35	86	110	90	81	89	115	97	93	160	163	237	160	117	74	77	50	37
18	7	2	2	13	32	42	78	101	72	81	101	81	91	91	140	152	181	145	95	84	64	57	16
11	4	1	2	10	30	62	120	114	90	87	95	100	104	115	170	216	212	131	97	68	59	47	20
8	4	1	5	16	36	61	133	94	84	88	93	97	95	133	202	172	179	108	81	86	62	31	16

Date: **Thursday, January 23, 2020** Total Daily Volume: **5061** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
22	2	0	4	28	40	86	225	248	202	196	209	229	245	329	529	555	661	385	257	216	200	128	65
3	0	0	1	7	4	16	41	66	51	47	44	60	58	64	120	129	187	122	74	49	54	37	30
8	2	0	0	8	8	16	40	57	44	44	52	52	63	66	108	117	152	112	70	59	45	41	16
7	0	0	1	2	10	23	69	67	54	50	57	56	68	92	137	170	177	84	62	46	45	30	9
4	0	0	2	11	18	31	75	58	53	55	56	61	56	107	164	139	145	67	51	62	56	20	10

Date: **Thursday, January 23, 2020** Total Daily Volume: **2443** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
21	17	6	11	22	66	114	192	171	134	141	169	164	142	103	143	148	148	159	133	96	62	57	24
3	4	2	5	4	4	19	45	44	39	34	45	55	39	29	40	34	50	38	43	25	23	13	7
10	5	2	2	5	24	26	38	44	28	37	49	29	28	25	32	35	29	33	25	25	19	16	0
4	4	1	1	8	20	39	51	47	36	37	38	44	36	23	33	46	35	47	35	22	14	17	11
4	4	1	3	5	18	30	58	36	31	33	37	36	39	26	38	33	34	41	30	24	6	11	6

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Friars Rd and Taylor St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **7190** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
31	20	29	28	52	109	250	619	632	454	389	441	395	411	410	575	732	655	348	200	155	113	81	61
14	4	12	8	23	7	56	95	150	113	86	93	80	112	91	115	184	185	115	56	37	31	28	15
11	2	8	4	5	17	56	134	170	126	90	135	92	92	109	119	192	174	95	62	45	34	28	25
4	6	4	8	10	35	53	202	154	112	110	89	89	108	116	154	199	142	76	50	40	29	14	6
2	8	5	8	14	50	85	188	158	103	103	124	134	99	94	187	157	154	62	32	33	19	11	15

Date: **Thursday, January 30, 2020** Total Daily Volume: **3669** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
18	15	15	15	33	54	112	384	417	277	210	197	188	227	214	255	354	233	106	114	88	66	47	30
7	1	7	6	11	2	28	57	99	69	54	46	36	60	43	49	83	63	32	34	18	14	17	5
6	2	1	2	2	5	25	77	123	78	54	53	45	58	62	52	87	53	22	30	29	21	16	11
3	4	2	0	7	21	24	127	108	67	55	42	49	51	57	63	110	59	27	32	23	21	7	3
2	8	5	7	13	26	35	123	87	63	47	56	58	58	52	91	74	58	25	18	18	10	7	11

Date: **Thursday, January 30, 2020** Total Daily Volume: **3521** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
13	5	14	13	19	55	138	235	215	177	179	244	207	184	196	320	378	422	242	86	67	47	34	31
7	3	5	2	12	5	28	38	51	44	32	47	44	52	48	66	101	122	83	22	19	17	11	10
5	0	7	2	3	12	31	57	47	48	36	82	47	34	47	67	105	121	73	32	16	13	12	14
1	2	2	8	3	14	29	75	46	45	55	47	40	57	59	91	89	83	49	18	17	8	7	3
0	0	0	1	1	24	50	65	71	40	56	68	76	41	42	96	83	96	37	14	15	9	4	4

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Taylor St and Kurtz St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **12480** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
52	33	28	54	94	275	567	961	865	651	612	698	762	650	865	1170	1318	1138	685	330	250	190	143	89
17	11	5	15	19	29	132	176	222	160	156	152	212	151	192	230	338	333	215	93	80	56	56	15
14	5	7	7	20	58	139	216	205	185	147	163	160	164	200	273	374	312	185	82	72	46	37	36
13	11	8	16	21	80	139	314	245	162	132	178	195	160	239	327	323	226	159	100	41	53	24	19
8	6	8	16	34	108	157	255	193	144	177	205	195	175	234	340	283	267	126	55	57	35	26	19

Date: **Thursday, January 30, 2020** Total Daily Volume: **6868** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
29	15	13	24	48	131	283	570	552	390	358	392	378	355	487	759	762	559	286	144	123	86	79	45
9	3	2	8	14	13	63	100	136	96	92	85	116	88	104	154	205	169	99	42	34	24	33	11
8	3	2	3	12	27	64	118	146	124	81	90	75	94	105	177	227	159	59	36	37	25	13	20
7	5	2	4	7	37	71	195	156	92	79	100	90	78	143	205	182	110	73	36	22	17	16	4
5	4	7	9	15	54	85	157	114	78	106	117	97	95	135	223	148	121	55	30	30	20	17	10

Date: **Thursday, January 30, 2020** Total Daily Volume: **5612** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
23	18	15	30	46	144	284	391	313	261	254	306	384	295	378	411	556	579	399	186	127	104	64	44
8	8	3	7	5	16	69	76	86	64	64	67	96	63	88	76	133	164	116	51	46	32	23	4
6	2	5	4	8	31	75	98	59	61	66	73	85	70	95	96	147	153	126	46	35	21	24	16
6	6	6	12	14	43	68	119	89	70	53	78	105	82	96	122	141	116	86	64	19	36	8	15
3	2	1	7	19	54	72	98	79	66	71	88	98	80	99	117	135	146	71	25	27	15	9	9

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Kurtz St and Enterprise St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **21839** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
117	79	81	139	224	567	1033	1471	1458	1215	1173	1333	1441	1296	1461	1687	1848	1732	1235	711	589	420	324	205
36	21	15	35	46	80	236	309	373	290	298	300	361	311	343	379	462	497	372	200	166	119	100	62
31	16	23	19	48	113	238	348	368	302	271	290	323	350	357	381	470	452	317	175	174	108	78	60
30	24	16	35	55	183	266	447	367	336	289	373	365	322	372	472	459	363	290	191	118	98	75	40
20	18	27	50	75	191	293	367	350	287	315	370	392	313	389	455	457	420	256	145	131	95	71	43

Date: **Thursday, January 30, 2020** Total Daily Volume: **9986** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
48	28	45	82	109	279	494	794	868	651	593	675	581	562	671	796	764	715	429	249	205	152	124	72
17	5	5	20	23	40	109	148	213	159	157	155	169	138	154	173	195	224	134	72	52	39	43	17
13	7	13	13	24	55	107	188	238	185	122	147	123	150	161	198	206	178	92	62	64	45	23	29
13	7	7	19	29	88	123	242	212	162	156	195	133	131	165	212	176	150	109	57	43	29	24	9
5	9	20	30	33	96	155	216	205	145	158	178	156	143	191	213	187	163	94	58	46	39	34	17

Date: **Thursday, January 30, 2020** Total Daily Volume: **11853** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
69	51	36	57	115	288	539	677	590	564	580	658	860	734	790	891	1084	1017	806	462	384	268	200	133
19	16	10	15	23	40	127	161	160	131	141	145	192	173	189	206	267	273	238	128	114	80	57	45
18	9	10	6	24	58	131	160	130	117	149	143	200	200	196	183	264	274	225	113	110	63	55	31
17	17	9	16	26	95	143	205	155	174	133	178	232	191	207	260	283	213	181	134	75	69	51	31
15	9	7	20	42	95	138	151	145	142	157	192	236	170	198	242	270	257	162	87	85	56	37	26

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Enterprise St and Barnett Ave**

Date: **Thursday, January 30, 2020** Total Daily Volume: **24952** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
132	82	100	141	227	699	1173	1828	1796	1351	1296	1550	1588	1510	1651	2005	2144	1985	1328	778	604	445	335	204
38	26	21	33	48	99	252	368	454	369	310	367	395	369	386	456	556	576	399	225	169	126	105	62
31	23	27	18	49	129	255	429	448	335	290	352	375	354	396	458	543	523	351	194	176	128	86	53
34	17	19	42	51	217	292	569	483	346	336	405	389	400	435	572	522	443	314	196	124	93	76	45
29	16	33	48	79	254	374	462	411	301	360	426	429	387	434	519	523	443	264	163	135	98	68	44

Date: **Thursday, January 30, 2020** Total Daily Volume: **12596** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
49	25	51	88	149	583	904	1396	1312	835	704	832	730	699	670	734	764	751	474	269	207	166	131	73
17	4	9	19	27	81	197	274	339	239	168	199	193	173	170	188	205	232	145	76	59	42	44	17
10	10	12	14	29	105	208	323	348	231	149	186	188	182	157	166	195	173	112	72	58	57	29	24
11	4	7	23	39	169	212	445	334	190	195	216	184	166	165	199	180	198	117	59	45	27	26	10
11	7	23	32	54	228	287	354	291	175	192	231	165	178	178	181	184	148	100	62	45	40	32	22

Date: **Thursday, January 30, 2020** Total Daily Volume: **12356** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
83	57	49	53	78	116	269	432	484	516	592	718	858	811	981	1271	1380	1234	854	509	397	279	204	131
21	22	12	14	21	18	55	94	115	130	142	168	202	196	216	268	351	344	254	149	110	84	61	45
21	13	15	4	20	24	47	106	100	104	141	166	187	172	239	292	348	350	239	122	118	71	57	29
23	13	12	19	12	48	80	124	149	156	141	189	205	234	270	373	342	245	197	137	79	66	50	35
18	9	10	16	25	26	87	108	120	126	168	195	264	209	256	338	339	295	164	101	90	58	36	22

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Barnett Ave and Witherby St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **66358** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
316	204	261	354	622	1763	2917	4340	4549	3702	3457	3953	4280	4171	4626	5192	5328	5010	3784	2512	1886	1515	1053	563
101	49	75	68	105	264	631	979	1131	1017	819	923	1071	1019	1077	1219	1362	1335	1074	735	490	444	330	159
79	50	62	56	120	351	689	1062	1130	916	807	911	1087	1022	1159	1262	1373	1337	1007	666	509	445	292	164
66	50	56	88	157	540	750	1188	1168	899	913	1046	1044	1031	1202	1366	1265	1199	888	603	458	325	224	123
70	55	68	142	240	608	847	1111	1120	870	918	1073	1078	1099	1188	1345	1328	1139	815	508	429	301	207	117

Date: **Thursday, January 30, 2020** Total Daily Volume: **33889** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
127	77	139	233	411	1342	2049	2905	2974	2299	1956	2196	2024	1922	1983	2256	2284	2217	1587	989	728	573	424	194
46	11	37	43	60	186	455	690	750	641	470	520	519	489	477	569	591	617	432	279	201	163	122	57
24	22	31	37	72	257	497	692	771	608	457	511	539	487	490	559	573	571	405	267	198	175	109	65
33	19	26	57	112	416	497	775	755	521	516	566	487	458	479	576	555	576	402	238	169	122	93	30
24	25	45	96	167	483	600	748	698	529	513	599	479	488	537	552	565	453	348	205	160	113	100	42

Date: **Thursday, January 30, 2020** Total Daily Volume: **32469** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
189	127	122	121	211	421	868	1435	1575	1403	1501	1757	2256	2249	2643	2936	3044	2793	2197	1523	1158	942	629	369
55	38	38	25	45	78	176	289	381	376	349	403	552	530	600	650	771	718	642	456	289	281	208	102
55	28	31	19	48	94	192	370	359	308	350	400	548	535	669	703	800	766	602	399	311	270	183	99
33	31	30	31	45	124	253	413	413	378	397	480	557	573	723	790	710	623	486	365	289	203	131	93
46	30	23	46	73	125	247	363	422	341	405	474	599	611	651	793	763	686	467	303	269	188	107	75

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Witherby St and W. Washington St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **61513** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
275	173	235	358	615	1687	2709	3949	4205	3446	3215	3545	3805	3769	4290	4815	4994	4668	3612	2375	1770	1433	1034	536
98	37	59	72	104	253	609	893	1067	955	762	828	950	932	978	1114	1241	1233	1009	694	467	415	317	156
53	47	58	59	121	344	637	969	1058	855	742	827	968	898	1056	1162	1270	1256	987	624	462	417	289	162
68	40	48	90	157	523	685	1103	1082	824	836	936	928	925	1116	1300	1210	1110	851	569	454	313	220	122
56	49	70	137	233	567	778	984	998	812	875	954	959	1014	1140	1239	1273	1069	765	488	387	288	208	96

Date: **Thursday, January 30, 2020** Total Daily Volume: **30321** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
82	55	127	228	394	1234	1906	2642	2735	2107	1787	1932	1747	1680	1753	1966	1984	1913	1424	916	644	510	394	161
32	9	33	44	59	171	441	617	708	589	434	453	462	440	409	481	504	506	381	256	180	139	107	54
18	11	27	39	67	237	455	641	712	553	424	461	467	412	434	492	493	517	368	250	171	154	103	61
20	12	21	54	108	392	458	712	693	478	461	494	412	397	425	509	497	485	356	210	157	114	87	26
12	23	46	91	160	434	552	672	622	487	468	524	406	431	485	484	490	405	319	200	136	103	97	20

Date: **Thursday, January 30, 2020** Total Daily Volume: **31192** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
193	118	108	130	221	453	803	1307	1470	1339	1428	1613	2058	2089	2537	2849	3010	2755	2188	1459	1126	923	640	375
66	28	26	28	45	82	168	276	359	366	328	375	488	492	569	633	737	727	628	438	287	276	210	102
35	36	31	20	54	107	182	328	346	302	318	366	501	486	622	670	777	739	619	374	291	263	186	101
48	28	27	36	49	131	227	391	389	346	375	442	516	528	691	791	713	625	495	359	297	199	133	96
44	26	24	46	73	133	226	312	376	325	407	430	553	583	655	755	783	664	446	288	251	185	111	76

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between W. Washington and Sassafras St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **13198** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
93	40	34	58	134	243	316	513	638	609	665	778	779	761	851	1244	1604	1433	886	442	382	292	254	149
32	7	10	12	25	54	63	98	156	146	163	181	208	193	188	254	423	407	279	127	100	70	67	42
21	15	9	10	25	54	75	140	155	156	174	186	187	202	185	294	418	393	222	124	98	69	89	40
23	7	9	22	37	60	86	144	169	157	163	197	202	179	204	318	383	325	206	102	98	81	64	38
17	11	6	14	47	75	92	131	158	150	165	214	182	187	274	378	380	308	179	89	86	72	34	29

Date: **Thursday, January 30, 2020** Total Daily Volume: **5249** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
65	25	15	24	54	97	148	276	323	322	341	406	346	372	369	344	375	415	274	176	169	114	123	76
23	6	8	6	15	14	30	56	76	69	91	102	92	97	94	88	116	118	84	50	39	28	32	19
14	11	3	5	10	24	30	72	82	93	92	90	71	102	81	80	87	108	62	54	53	36	42	21
18	3	4	10	16	24	46	81	81	82	86	104	92	85	84	86	89	112	61	36	38	22	31	16
10	5	0	3	13	35	42	67	84	78	72	110	91	88	110	90	83	77	67	36	39	28	18	20

Date: **Thursday, January 30, 2020** Total Daily Volume: **7949** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
28	15	19	34	80	146	168	237	315	287	324	372	433	389	482	900	1229	1018	612	266	213	178	131	73
9	1	2	6	10	40	33	42	80	77	72	79	116	96	94	166	307	289	195	77	61	42	35	23
7	4	6	5	15	30	45	68	73	63	82	96	116	100	104	214	331	285	160	70	45	33	47	19
5	4	5	12	21	36	40	63	88	75	77	93	110	94	120	232	294	213	145	66	60	59	33	22
7	6	6	11	34	40	50	64	74	72	93	104	91	99	164	288	297	231	112	53	47	44	16	9

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Pacific Hwy, between Sassafras St and W. Laurel St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **18261** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
117	40	50	104	263	563	605	754	898	896	977	1100	1065	1024	1055	1502	1766	1681	1139	741	669	526	448	278
45	8	18	11	34	110	162	159	249	212	250	281	279	269	246	308	432	440	341	212	157	128	113	86
28	12	7	16	50	160	146	192	215	227	250	264	253	249	243	379	477	453	285	190	188	123	143	86
25	10	12	34	79	148	141	187	212	258	218	298	271	243	246	400	440	388	260	182	171	137	108	61
19	10	13	43	100	145	156	216	222	199	259	257	262	263	320	415	417	400	253	157	153	138	84	45

Date: **Thursday, January 30, 2020** Total Daily Volume: **6857** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
57	19	17	58	122	208	237	344	378	385	416	508	460	461	427	485	487	500	369	279	247	162	144	87
23	5	5	4	19	36	62	75	105	89	109	139	113	139	114	113	124	125	96	89	52	41	39	22
16	9	3	7	26	62	51	86	100	109	112	125	108	103	111	124	134	138	86	72	78	47	46	26
13	4	3	16	39	61	61	89	88	93	88	133	122	98	87	140	127	134	86	56	65	37	36	17
5	1	6	31	38	49	63	94	85	94	107	111	117	121	115	108	102	103	101	62	52	37	23	22

Date: **Thursday, January 30, 2020** Total Daily Volume: **11404** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
60	21	33	46	141	355	368	410	520	511	561	592	605	563	628	1017	1279	1181	770	462	422	364	304	191
22	3	13	7	15	74	100	84	144	123	141	142	166	130	132	195	308	315	245	123	105	87	74	64
12	3	4	9	24	98	95	106	115	118	138	139	145	146	132	255	343	315	199	118	110	76	97	60
12	6	9	18	40	87	80	98	124	165	130	165	149	145	159	260	313	254	174	126	106	100	72	44
14	9	7	12	62	96	93	122	137	105	152	146	145	142	205	307	315	297	152	95	101	101	61	23

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Morena Blvd, between Friars Rd and Kumeyaay Hwy**

Date: **Thursday, January 30, 2020** Total Daily Volume: **42465** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
216	105	126	105	243	743	1281	3278	3613	2793	2284	2329	2641	2631	2606	2712	3253	3390	2548	1812	1346	1300	697	413
67	33	30	22	31	117	224	548	929	753	537	550	670	624	654	662	831	875	768	531	386	407	193	126
63	23	27	26	50	173	274	776	916	717	577	558	709	660	668	677	781	905	640	495	334	354	191	110
48	26	44	28	72	177	329	933	886	672	575	576	622	700	675	656	795	805	573	408	311	280	154	99
38	23	25	29	90	276	454	1021	882	651	595	645	640	647	609	717	846	805	567	378	315	259	159	78

Date: **Thursday, January 30, 2020** Total Daily Volume: **21705** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
117	56	63	56	148	510	819	2214	2540	1681	1231	1217	1266	1359	1221	1160	1225	1278	1054	774	621	541	345	209
42	17	22	7	20	80	142	333	663	441	287	282	305	318	311	273	299	322	283	200	160	129	105	58
27	16	16	17	26	119	175	520	620	451	334	307	327	356	348	307	302	341	244	230	154	158	92	59
24	11	18	13	42	118	212	650	635	410	302	294	308	332	270	286	295	291	256	168	150	133	70	55
24	12	7	19	60	193	290	711	622	379	308	334	326	353	292	294	329	324	271	176	157	121	78	37

Date: **Thursday, January 30, 2020** Total Daily Volume: **20760** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
99	49	63	49	95	233	462	1064	1073	1112	1053	1112	1375	1272	1385	1552	2028	2112	1494	1038	725	759	352	204
25	16	8	15	11	37	82	215	266	312	250	268	365	306	343	389	532	553	485	331	226	278	88	68
36	7	11	9	24	54	99	256	296	266	243	251	382	304	320	370	479	564	396	265	180	196	99	51
24	15	26	15	30	59	117	283	251	262	273	282	314	368	405	370	500	514	317	240	161	147	84	44
14	11	18	10	30	83	164	310	260	272	287	311	314	294	317	423	517	481	296	202	158	138	81	41

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Kurtz St, between Rosecrans St and Pacific Hwy**

Date: **Thursday, January 23, 2020** Total Daily Volume: **11142** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
80	42	44	62	124	309	452	571	610	530	589	704	785	708	701	792	818	812	693	468	394	505	213	136
28	11	6	12	24	56	114	134	143	131	144	160	184	198	177	183	201	202	208	139	92	189	63	46
18	12	14	12	20	58	96	140	161	147	142	184	181	174	177	176	188	218	191	97	99	157	53	26
17	10	13	14	27	91	107	152	141	140	146	173	191	166	167	229	205	188	139	130	83	90	53	33
17	9	11	24	53	104	135	145	165	112	157	187	229	170	180	204	224	204	155	102	120	69	44	31

Date: **Thursday, January 23, 2020** Total Daily Volume: **4337** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
31	8	20	34	53	125	189	294	317	263	244	313	290	268	223	290	331	308	291	143	104	80	63	55
8	0	4	6	11	21	51	73	74	67	60	79	66	65	48	61	81	93	92	46	20	26	17	19
10	2	7	8	9	20	41	61	83	81	53	67	73	73	60	70	79	69	78	25	26	17	17	11
7	3	5	5	13	40	41	77	73	58	66	84	65	62	44	83	90	69	58	41	29	18	15	13
6	3	4	15	20	44	56	83	87	57	65	83	86	68	71	76	81	77	63	31	29	19	14	12

Date: **Thursday, January 23, 2020** Total Daily Volume: **6805** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
49	34	24	28	71	184	263	277	293	267	345	391	495	440	478	502	487	504	402	325	290	425	150	81
20	11	2	6	13	35	63	61	69	64	84	81	118	133	129	122	120	109	116	93	72	163	46	27
8	10	7	4	11	38	55	79	78	66	89	117	108	101	117	106	109	149	113	72	73	140	36	15
10	7	8	9	14	51	66	75	68	82	80	89	126	104	123	146	115	119	81	89	54	72	38	20
11	6	7	9	33	60	79	62	78	55	92	104	143	102	109	128	143	127	92	71	91	50	30	19

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Sports Arena Blvd, between Kemper St and Roscrans St**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **25899** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
147	84	52	86	126	275	589	819	1085	1253	1666	2018	2127	2014	1829	1782	1859	1957	1886	1473	1133	873	457	309
39	22	13	11	24	53	109	191	273	281	386	433	503	530	494	427	466	464	538	377	337	228	139	99
46	24	16	23	21	47	139	213	241	330	401	501	549	522	417	441	445	523	467	406	281	216	118	94
36	16	11	16	33	73	150	212	274	334	404	517	528	497	477	447	456	471	456	365	258	237	102	56
26	22	12	36	48	102	191	203	297	308	475	567	547	465	441	467	492	499	425	325	257	192	98	60

Date: **Wednesday, January 29, 2020** Total Daily Volume: **13137** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
87	36	24	30	45	98	234	368	481	556	840	1009	1117	1026	973	910	962	1037	988	797	617	484	250	168
22	12	6	6	6	20	36	79	134	132	207	223	261	280	261	228	253	251	275	219	189	120	88	60
30	10	7	8	7	20	66	108	102	138	201	240	276	255	225	209	224	277	239	212	160	128	65	47
22	8	5	8	14	25	59	101	105	136	191	259	288	261	255	244	225	249	238	191	133	129	52	25
13	6	6	8	18	33	73	80	140	150	241	287	292	230	232	229	260	260	236	175	135	107	45	36

Date: **Wednesday, January 29, 2020** Total Daily Volume: **12762** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
60	48	28	56	81	177	355	451	604	697	826	1009	1010	988	856	872	897	920	898	676	516	389	207	141
17	10	7	5	18	33	73	112	139	149	179	210	242	250	233	199	213	213	263	158	148	108	51	39
16	14	9	15	14	27	73	105	139	192	200	261	273	267	192	232	221	246	228	194	121	88	53	47
14	8	6	8	19	48	91	111	169	198	213	258	240	236	222	203	231	222	218	174	125	108	50	31
13	16	6	28	30	69	118	123	157	158	234	280	255	235	209	238	232	239	189	150	122	85	53	24

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Sports Arena Blvd, between Rosecrans St and St. Charles St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **1877** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
11	3	2	7	11	24	55	84	115	95	107	147	178	174	152	193	203	120	70	33	42	28	16	7
4	2	1	1	2	3	13	19	21	17	20	25	52	52	34	43	50	40	20	11	11	7	5	2
2	1	0	3	3	11	19	22	34	33	28	38	47	41	32	53	60	37	15	8	9	5	7	3
2	0	0	1	1	7	8	26	31	27	22	44	41	42	42	49	46	26	21	11	5	5	3	1
3	0	1	2	5	3	15	17	29	18	37	40	38	39	44	48	47	17	14	3	17	11	1	1

Date: **Thursday, January 23, 2020** Total Daily Volume: **906** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
4	2	2	5	3	5	12	29	36	38	56	68	70	76	78	136	151	72	23	8	14	12	5	1
1	1	1	1	1	1	3	2	4	7	14	14	19	24	17	29	41	26	6	5	3	1	3	1
1	1	0	2	2	1	6	8	10	12	14	16	18	19	17	40	45	26	6	2	1	1	1	0
0	0	0	1	0	3	2	11	11	9	9	20	16	18	19	32	35	12	8	0	1	1	1	0
2	0	1	1	0	0	1	8	11	10	19	18	17	15	25	35	30	8	3	1	9	9	0	0

Date: **Thursday, January 23, 2020** Total Daily Volume: **971** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
7	1	0	2	8	19	43	55	79	57	51	79	108	98	74	57	52	48	47	25	28	16	11	6
3	1	0	0	1	2	10	17	17	10	6	11	33	28	17	14	9	14	14	6	8	6	2	1
1	0	0	1	1	10	13	14	24	21	14	22	29	22	15	13	15	11	9	6	8	4	6	3
2	0	0	0	1	4	6	15	20	18	13	24	25	24	23	17	11	14	13	11	4	4	2	1
1	0	0	1	5	3	14	9	18	8	18	22	21	24	19	13	17	9	11	2	8	2	1	1

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Midway Dr, between East Dr and Rosecrans Dr**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **30934** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
157	136	124	69	162	292	630	1167	1651	1767	1943	2450	2521	2307	2310	2282	2247	2329	2008	1438	1132	839	543	430
46	38	47	11	20	32	108	253	351	468	474	550	597	638	574	604	581	661	554	455	301	265	148	119
35	30	34	15	39	76	135	251	407	421	495	621	583	611	552	620	556	581	472	356	265	186	158	95
38	33	23	14	42	62	144	297	418	417	468	637	662	502	629	541	563	565	514	345	269	216	116	113
38	35	20	29	61	122	243	366	475	461	506	642	679	556	555	517	547	522	468	282	297	172	121	103

Date: **Wednesday, January 29, 2020** Total Daily Volume: **14017** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
70	65	58	24	56	121	259	505	615	660	823	1150	1145	1035	1088	1065	1015	1146	885	682	530	460	312	248
26	14	22	7	8	13	41	124	124	183	193	246	267	322	275	295	318	332	255	225	146	160	84	75
10	19	20	6	15	34	50	113	171	174	209	251	266	275	258	271	242	274	214	167	120	92	89	41
14	13	9	5	16	27	58	140	150	150	179	317	307	187	324	268	231	273	240	170	117	103	67	67
20	19	7	6	17	47	110	128	170	153	242	336	305	251	231	231	224	267	176	120	147	105	72	65

Date: **Wednesday, January 29, 2020** Total Daily Volume: **16917** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
87	71	66	45	106	171	371	662	1036	1107	1120	1300	1376	1272	1222	1217	1232	1183	1123	756	602	379	231	182
20	24	25	4	12	19	67	129	227	285	281	304	330	316	299	309	263	329	299	230	155	105	64	44
25	11	14	9	24	42	85	138	236	247	286	370	317	336	294	349	314	307	258	189	145	94	69	54
24	20	14	9	26	35	86	157	268	267	289	320	355	315	305	273	332	292	274	175	152	113	49	46
18	16	13	23	44	75	133	238	305	308	264	306	374	305	324	286	323	255	292	162	150	67	49	38

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Midway Dr, between Rosecrans St and Bogley Dr**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **22283** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
138	110	98	93	153	308	522	853	1119	1226	1380	1747	1878	1660	1673	1823	1713	1654	1233	981	776	546	379	220
41	25	28	21	30	44	116	167	243	306	327	431	489	443	415	453	416	436	343	288	214	133	105	61
41	26	22	18	22	68	109	220	246	312	351	434	443	415	405	478	423	434	332	256	219	147	97	56
32	33	18	20	40	79	121	238	317	292	331	417	472	426	384	434	431	384	276	215	191	149	82	49
24	26	30	34	61	117	176	228	313	316	371	465	474	376	469	458	443	400	282	222	152	117	95	54

Date: **Wednesday, January 29, 2020** Total Daily Volume: **9769** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
69	56	44	24	59	117	218	328	436	486	573	711	812	761	748	764	729	721	577	517	421	282	205	111
26	12	13	7	11	24	44	75	86	110	138	161	207	219	191	206	213	190	171	159	117	76	58	36
20	13	12	6	8	30	45	88	97	129	141	161	203	201	176	188	190	165	152	139	117	68	54	19
15	16	7	6	19	26	55	85	139	117	126	175	202	177	187	181	145	177	124	108	103	65	41	26
8	15	12	5	21	37	74	80	114	130	168	214	200	164	194	189	181	189	130	111	84	73	52	30

Date: **Wednesday, January 29, 2020** Total Daily Volume: **12514** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
69	54	54	69	94	191	304	525	683	740	807	1036	1066	899	925	1059	984	933	656	464	355	264	174	109
15	13	15	14	19	20	72	92	157	196	189	270	282	224	224	247	203	246	172	129	97	57	47	25
21	13	10	12	14	38	64	132	149	183	210	273	240	214	229	290	233	269	180	117	102	79	43	37
17	17	11	14	21	53	66	153	178	175	205	242	270	249	197	253	286	207	152	107	88	84	41	23
16	11	18	29	40	80	102	148	199	186	203	251	274	212	275	269	262	211	152	111	68	44	43	24

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Midway Dr, between Bogley Dr and Barnett Ave**

Date: **Wednesday, January 29, 2020** Total Daily Volume: **20056** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
107	84	79	101	167	297	490	779	1013	1053	1198	1549	1688	1462	1482	1566	1622	1554	1165	874	680	488	344	214
36	21	23	17	18	45	113	165	223	288	287	365	421	382	378	388	371	399	323	251	192	114	105	58
33	23	14	15	29	64	95	196	237	255	295	416	393	378	360	404	435	421	321	210	186	127	85	59
21	22	17	26	45	84	109	215	265	253	302	372	447	379	333	390	410	358	264	203	164	136	83	49
17	18	25	43	75	104	173	203	288	257	314	396	427	323	411	384	406	376	257	210	138	111	71	48

Date: **Wednesday, January 29, 2020** Total Daily Volume: **10704** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
48	37	38	71	106	187	305	501	633	632	736	927	901	726	762	833	821	785	534	394	285	195	142	105
16	10	8	13	12	21	76	97	146	173	181	236	227	176	202	198	180	206	144	107	87	42	41	27
14	13	6	8	17	37	59	122	149	152	177	249	219	187	195	222	212	218	142	93	77	54	34	33
10	9	6	14	25	54	65	134	156	151	183	224	227	195	150	216	226	168	126	88	71	60	40	24
8	5	18	36	52	75	105	148	182	156	195	218	228	168	215	197	203	193	122	106	50	39	27	21

Date: **Wednesday, January 29, 2020** Total Daily Volume: **9352** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
59	47	41	30	61	110	185	278	380	421	462	622	787	736	720	733	801	769	631	480	395	293	202	109
20	11	15	4	6	24	37	68	77	115	106	129	194	206	176	190	191	193	179	144	105	72	64	31
19	10	8	7	12	27	36	74	88	103	118	167	174	191	165	182	223	203	179	117	109	73	51	26
11	13	11	12	20	30	44	81	109	102	119	148	220	184	183	174	184	190	138	115	93	76	43	25
9	13	7	7	23	29	68	55	106	101	119	178	199	155	196	187	203	183	135	104	88	72	44	27

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Lytton St, between Rosecrans St and St. Charles St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **28042** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
112	53	42	102	228	746	1353	2105	1964	1629	1420	1704	1869	1774	1994	2250	2166	1997	1531	1026	706	604	428	239
41	16	8	18	35	92	301	511	555	420	318	371	523	416	434	583	529	509	411	292	161	151	135	61
26	17	10	13	44	148	331	562	467	445	377	399	457	463	455	523	540	486	431	276	198	161	123	72
20	10	15	34	59	224	332	506	475	391	351	432	424	458	505	532	554	560	326	239	165	151	92	56
25	10	9	37	90	282	389	526	467	373	374	502	465	437	600	612	543	442	363	219	182	141	78	50

Date: **Thursday, January 23, 2020** Total Daily Volume: **16004** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
61	32	27	73	160	581	934	1271	1140	971	798	1006	1036	920	1031	1144	1135	1162	834	578	429	339	219	123
16	12	2	12	21	61	222	340	350	253	180	203	301	211	218	315	260	306	227	145	93	79	69	30
17	10	6	8	32	120	238	345	259	275	229	240	264	214	217	263	281	275	240	160	127	83	55	41
14	4	11	23	45	182	219	282	258	237	179	256	229	234	265	249	298	323	186	140	96	104	50	25
14	6	8	30	62	218	255	304	273	206	210	307	242	261	331	317	296	258	181	133	113	73	45	27

Date: **Thursday, January 23, 2020** Total Daily Volume: **12038** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
51	21	15	29	68	165	419	834	824	658	622	698	833	854	963	1106	1031	835	697	448	277	265	209	116
25	4	6	6	14	31	79	171	205	167	138	168	222	205	216	268	269	203	184	147	68	72	66	31
9	7	4	5	12	28	93	217	208	170	148	159	193	249	238	260	259	211	191	116	71	78	68	31
6	6	4	11	14	42	113	224	217	154	172	176	195	224	240	283	256	237	140	99	69	47	42	31
11	4	1	7	28	64	134	222	194	167	164	195	223	176	269	295	247	184	182	86	69	68	33	23

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Barnett Ave, between St. Charles St and Henderson Ave**

Date: **Thursday, January 23, 2020** Total Daily Volume: **28568** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
108	60	45	111	233	700	1242	2031	2102	1683	1403	1691	1867	1832	2057	2477	2337	2077	1531	1042	669	601	442	227
36	15	11	19	34	103	241	458	528	467	338	374	479	428	478	551	574	531	457	320	152	152	136	63
29	22	10	14	52	140	315	521	553	446	349	430	461	478	451	616	633	526	395	271	186	158	133	62
18	12	14	36	56	219	311	522	494	377	350	436	431	463	549	587	570	559	331	252	163	151	91	54
25	11	10	42	91	238	375	530	527	393	366	451	496	463	579	723	560	461	348	199	168	140	82	48

Date: **Thursday, January 23, 2020** Total Daily Volume: **13743** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
60	22	16	32	69	167	413	776	844	633	616	710	922	1020	1156	1356	1312	1008	814	598	415	375	276	133
24	5	7	6	14	32	67	142	207	178	143	165	234	230	278	291	360	253	231	200	86	101	89	39
15	8	4	6	14	31	98	206	216	169	148	176	225	290	279	335	350	264	203	136	117	106	93	34
7	5	4	14	13	49	110	210	207	143	170	185	198	266	288	336	297	273	184	155	101	79	48	32
14	4	1	6	28	55	138	218	214	143	155	184	265	234	311	394	305	218	196	107	111	89	46	28

Date: **Thursday, January 23, 2020** Total Daily Volume: **14825** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
48	38	29	79	164	533	829	1255	1258	1050	787	981	945	812	901	1121	1025	1069	717	444	254	226	166	94
12	10	4	13	20	71	174	316	321	289	195	209	245	198	200	260	214	278	226	120	66	51	47	24
14	14	6	8	38	109	217	315	337	277	201	254	236	188	172	281	283	262	192	135	69	52	40	28
11	7	10	22	43	170	201	312	287	234	180	251	233	197	261	251	273	286	147	97	62	72	43	22
11	7	9	36	63	183	237	312	313	250	211	267	231	229	268	329	255	243	152	92	57	51	36	20

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Barnett Ave, between Henderson Ave and Pacific Hwy**

Date: **Thursday, January 23, 2020** Total Daily Volume: **30263** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
113	61	50	114	252	768	1363	2213	2290	1753	1507	1763	1983	1957	2139	2670	2465	2164	1572	1080	692	610	453	231
36	14	15	23	38	106	277	519	573	486	367	402	529	470	494	617	601	556	463	330	164	150	140	64
32	23	11	13	58	163	332	557	600	472	374	441	481	496	469	643	671	563	409	281	195	157	140	63
18	11	14	37	57	236	346	553	540	383	375	451	458	505	572	639	627	571	340	259	164	152	96	54
27	13	10	41	99	263	408	584	577	412	391	469	515	486	604	771	566	474	360	210	169	151	77	50

Date: **Thursday, January 23, 2020** Total Daily Volume: **14797** Description: **Eastbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
62	24	19	34	83	217	508	899	959	683	662	738	980	1105	1206	1510	1373	1056	833	617	430	382	282	135
24	5	8	7	17	35	86	176	240	194	152	171	258	258	289	352	366	273	232	205	94	101	92	40
17	8	6	7	15	50	123	240	251	179	160	183	232	296	292	352	375	275	209	145	120	106	95	34
6	5	4	15	16	61	135	236	230	151	185	193	219	299	302	366	322	282	186	150	101	80	50	32
15	6	1	5	35	71	164	247	238	159	165	191	271	252	323	440	310	226	206	117	115	95	45	29

Date: **Thursday, January 23, 2020** Total Daily Volume: **15466** Description: **Westbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
51	37	31	80	169	551	855	1314	1331	1070	845	1025	1003	852	933	1160	1092	1108	739	463	262	228	171	96
12	9	7	16	21	71	191	343	333	292	215	231	271	212	205	265	235	283	231	125	70	49	48	24
15	15	5	6	43	113	209	317	349	293	214	258	249	200	177	291	296	288	200	136	75	51	45	29
12	6	10	22	41	175	211	317	310	232	190	258	239	206	270	273	305	289	154	109	63	72	46	22
12	7	9	36	64	192	244	337	339	253	226	278	244	234	281	331	256	248	154	93	54	56	32	21

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Hancock St, between Old Town Ave and Witherby St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **8903** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
63	22	16	33	73	232	552	729	594	469	464	486	547	568	555	622	833	716	487	294	245	153	93	57
16	9	4	5	12	38	106	154	164	127	102	119	118	142	139	145	201	190	145	99	64	44	33	18
13	6	6	4	17	58	124	192	136	132	108	122	134	148	121	153	217	184	131	86	54	39	21	20
25	4	4	7	17	54	149	180	156	117	136	110	150	133	131	159	228	174	128	67	75	33	22	10
9	3	2	17	27	82	173	203	138	93	118	135	145	145	164	165	187	168	83	42	52	37	17	9

Date: **Thursday, January 23, 2020** Total Daily Volume: **3249** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
45	13	5	6	28	24	42	92	110	128	176	201	232	269	263	337	423	301	187	115	110	76	46	20
13	6	1	3	3	10	12	23	26	23	35	56	35	64	69	70	102	103	60	41	22	22	18	7
10	3	2	1	6	4	8	13	28	35	41	39	58	75	55	88	104	71	49	28	17	15	9	10
17	2	1	0	7	3	7	37	36	34	53	45	66	62	67	94	117	55	57	28	42	20	11	1
5	2	1	2	12	7	15	19	20	36	47	61	73	68	72	85	100	72	21	18	29	19	8	2

Date: **Thursday, January 23, 2020** Total Daily Volume: **5654** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
18	9	11	27	45	208	510	637	484	341	288	285	315	299	292	285	410	415	300	179	135	77	47	37
3	3	3	2	9	28	94	131	138	104	67	63	83	78	70	75	99	87	85	58	42	22	15	11
3	3	4	3	11	54	116	179	108	97	67	83	76	73	66	65	113	113	82	58	37	24	12	10
8	2	3	7	10	51	142	143	120	83	83	65	84	71	64	65	111	119	71	39	33	13	11	9
4	1	1	15	15	75	158	184	118	57	71	74	72	77	92	80	87	96	62	24	23	18	9	7

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Hancock St, between Witherby St and Noell St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **4428** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
55	17	8	17	45	40	98	213	225	250	260	232	268	295	281	263	451	377	385	239	189	121	65	34
17	10	3	4	13	10	15	28	52	76	57	64	60	80	76	63	115	87	88	70	51	34	23	11
13	1	4	3	10	9	21	44	45	59	58	60	66	69	59	61	138	91	110	74	54	29	13	10
22	4	1	2	11	6	30	53	66	61	70	51	77	69	72	58	111	117	107	62	46	28	16	6
3	2	0	8	11	15	32	88	62	54	75	57	65	77	74	81	87	82	80	33	38	30	13	7

Date: **Thursday, January 23, 2020** Total Daily Volume: **1268** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
37	8	3	6	20	12	19	33	51	80	82	64	75	62	74	56	122	90	133	86	71	49	27	8
12	4	1	2	4	3	3	5	8	23	18	22	9	18	19	17	32	19	37	29	16	14	10	3
9	1	2	1	3	2	8	8	10	20	18	17	15	8	15	16	41	15	36	25	16	11	6	4
14	2	0	0	7	1	2	6	22	15	22	11	24	19	23	11	28	31	39	21	19	12	6	0
2	1	0	3	6	6	6	14	11	22	24	14	27	17	17	12	21	25	21	11	20	12	5	1

Date: **Thursday, January 23, 2020** Total Daily Volume: **3160** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
18	9	5	11	25	28	79	180	174	170	178	168	193	233	207	207	329	287	252	153	118	72	38	26
5	6	2	2	9	7	12	23	44	53	39	42	51	62	57	46	83	68	51	41	35	20	13	8
4	0	2	2	7	7	13	36	35	39	40	43	51	61	44	45	97	76	74	49	38	18	7	6
8	2	1	2	4	5	28	47	44	46	48	40	53	50	49	47	83	86	68	41	27	16	10	6
1	1	0	5	5	9	26	74	51	32	51	43	38	60	57	69	66	57	59	22	18	18	8	6

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **Hancock St, between Noell St and W. Washington St**

Date: **Thursday, January 23, 2020** Total Daily Volume: **14457** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
63	41	61	101	219	358	482	713	879	725	731	856	848	783	906	1129	1238	1464	1057	641	499	337	213	113
25	10	13	20	31	81	97	129	219	208	174	184	200	195	222	276	358	325	283	194	140	118	65	39
15	9	14	21	59	98	114	149	226	166	197	214	199	205	217	270	283	337	287	183	119	74	47	27
18	13	18	25	56	82	122	213	209	182	190	214	231	169	252	284	308	431	259	142	135	61	55	25
5	9	16	35	73	97	149	222	225	169	170	244	218	214	215	299	289	371	228	122	105	84	46	22

Date: **Thursday, January 23, 2020** Total Daily Volume: **4702** Description: **Southbound Volume (Street)**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
30	17	18	13	32	67	122	223	319	261	267	286	338	282	297	336	396	450	330	197	178	113	97	33
11	5	3	2	6	15	17	47	73	86	57	82	85	56	83	89	103	91	82	59	47	44	31	8
9	5	3	0	3	15	19	47	93	54	81	71	82	82	74	80	97	107	84	66	30	26	19	12
8	4	7	3	7	15	41	64	75	63	71	68	81	63	80	92	111	147	100	39	61	17	28	8
2	3	5	8	16	22	45	65	78	58	58	65	90	81	60	75	85	105	64	33	40	26	19	5

Date: **Thursday, January 23, 2020** Total Daily Volume: **9755** Description: **Southbound Volume (Offramp)**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
33	24	43	88	187	291	360	490	560	464	464	570	510	501	609	793	842	1014	727	444	321	224	116	80
14	5	10	18	25	66	80	82	146	122	117	102	115	139	139	187	255	234	201	135	93	74	34	31
6	4	11	21	56	83	95	102	133	112	116	143	117	123	143	190	186	230	203	117	89	48	28	15
10	9	11	22	49	67	81	149	134	119	119	146	150	106	172	192	197	284	159	103	74	44	27	17
3	6	11	27	57	75	104	157	147	111	112	179	128	133	155	224	204	266	164	89	65	58	27	17

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **W. Washington St, between Admiral Boland Way and Pacific Hwy**

Date: **Thursday, January 30, 2020** Total Daily Volume: **16542** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
249	98	184	329	538	817	937	791	834	770	801	881	896	1009	865	762	1003	842	1039	759	607	639	548	344
75	24	39	59	141	148	210	212	194	211	157	214	215	249	222	204	180	287	247	225	142	197	123	72
72	30	26	77	133	172	215	207	216	188	220	227	197	241	241	166	274	225	286	172	167	161	167	153
31	17	62	93	122	229	299	211	219	186	253	188	236	239	221	172	267	139	247	201	176	128	140	74
71	27	57	100	142	268	213	161	205	185	171	252	248	280	181	220	282	191	259	161	122	153	118	45

Date: **Thursday, January 30, 2020** Total Daily Volume: **10849** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
232	61	93	90	147	208	407	342	477	523	525	583	616	771	656	612	793	640	729	581	466	504	497	296
69	18	28	31	33	26	108	89	89	124	89	157	146	168	178	167	140	218	164	178	106	151	111	57
71	20	7	22	35	32	88	91	115	144	142	166	139	192	185	120	227	180	178	117	133	127	146	142
28	11	21	18	33	51	127	85	147	122	174	104	165	181	169	127	220	98	181	157	139	100	128	57
64	12	37	19	46	99	84	77	126	133	120	156	166	230	124	198	206	144	206	129	88	126	112	40

Date: **Thursday, January 30, 2020** Total Daily Volume: **5693** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
17	37	91	239	391	609	530	449	357	247	276	298	280	238	209	150	210	202	310	178	141	135	51	48
6	6	11	28	108	122	102	123	105	87	68	57	69	81	44	37	40	69	83	47	36	46	12	15
1	10	19	55	98	140	127	116	101	44	78	61	58	49	56	46	47	45	108	55	34	34	21	11
3	6	41	75	89	178	172	126	72	64	79	84	71	58	52	45	47	41	66	44	37	28	12	17
7	15	20	81	96	169	129	84	79	52	51	96	82	50	57	22	76	47	53	32	34	27	6	5

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4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **W. Washington St, between Pacific Hwy and Hancock St**

Date: **Thursday, January 30, 2020** Total Daily Volume: **20289** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
179	106	115	221	392	605	812	1034	966	980	1001	1499	1425	1426	1406	1494	1542	1352	1103	726	606	520	462	317
54	38	26	43	92	124	171	252	232	291	230	344	367	336	362	379	361	388	285	201	129	151	94	74
48	21	26	54	87	126	202	253	238	214	261	385	312	363	357	361	429	350	299	182	192	142	149	114
46	22	32	61	101	169	244	278	254	236	271	310	361	350	354	342	397	303	242	182	150	96	117	76
31	25	31	63	112	186	195	251	242	239	239	460	385	377	333	412	355	311	277	161	135	131	102	53

Date: **Thursday, January 30, 2020** Total Daily Volume: **10482** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
140	66	53	32	70	131	260	336	349	428	461	591	711	841	822	935	939	857	638	441	417	355	375	234
37	26	21	9	14	18	66	74	65	105	95	159	169	170	204	245	212	247	153	122	74	104	74	52
40	15	10	6	18	21	61	77	85	104	109	150	163	226	219	211	281	213	164	103	144	92	120	102
36	10	13	7	19	40	76	90	110	119	130	106	169	204	209	196	235	183	142	104	109	65	94	51
27	15	9	10	19	52	57	95	89	100	127	176	210	241	190	283	211	214	179	112	90	94	87	29

Date: **Thursday, January 30, 2020** Total Daily Volume: **9807** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
39	40	62	189	322	474	552	698	617	552	540	908	714	585	584	559	603	495	465	285	189	165	87	83
17	12	5	34	78	106	105	178	167	186	135	185	198	166	158	134	149	141	132	79	55	47	20	22
8	6	16	48	69	105	141	176	153	110	152	235	149	137	138	150	148	137	135	79	48	50	29	12
10	12	19	54	82	129	168	188	144	117	141	204	192	146	145	146	162	120	100	78	41	31	23	25
4	10	22	53	93	134	138	156	153	139	112	284	175	136	143	129	144	97	98	49	45	37	15	24

Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: **W. Washington St, between Hancock St and W. University Ave**

Date: **Thursday, January 30, 2020** Total Daily Volume: **27007** Description: **Total Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
118	86	51	80	136	372	863	1839	1815	1578	1459	1605	1764	1635	1796	2253	2203	2140	1849	1132	850	675	440	268
41	22	13	17	20	60	149	349	454	417	323	344	419	412	390	503	537	545	491	331	243	216	120	76
29	18	15	18	32	79	189	402	442	382	358	381	440	414	450	525	581	544	476	291	212	168	139	69
29	26	8	25	41	98	235	549	457	387	424	430	433	378	463	615	525	525	480	266	212	149	101	73
19	20	15	20	43	135	290	539	462	392	354	450	472	431	493	610	560	526	402	244	183	142	80	50

Date: **Thursday, January 30, 2020** Total Daily Volume: **13441** Description: **Northbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
51	38	22	28	50	147	323	681	804	714	653	729	784	744	895	1345	1374	1382	1100	516	403	321	217	120
17	5	7	6	6	28	58	115	193	180	125	161	188	174	170	261	334	340	282	174	113	110	59	39
16	6	6	8	9	31	71	148	174	165	151	151	192	209	223	285	382	354	285	134	115	84	67	33
10	14	3	8	14	33	90	190	212	182	204	199	187	161	229	386	302	347	295	110	91	72	43	31
8	13	6	6	21	55	104	228	225	187	173	218	217	200	273	413	356	341	238	98	84	55	48	17

Date: **Thursday, January 30, 2020** Total Daily Volume: **13566** Description: **Southbound Volume**

0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
67	48	29	52	86	225	540	1158	1011	864	806	876	980	891	901	908	829	758	749	616	447	354	223	148
24	17	6	11	14	32	91	234	261	237	198	183	231	238	220	242	203	205	209	157	130	106	61	37
13	12	9	10	23	48	118	254	268	217	207	230	248	205	227	240	199	190	191	157	97	84	72	36
19	12	5	17	27	65	145	359	245	205	220	231	246	217	234	229	223	178	185	156	121	77	58	42
11	7	9	14	22	80	186	311	237	205	181	232	255	231	220	197	204	185	164	146	99	87	32	33

APPENDIX D

EXISTING INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	148	159	79	121	116	615
Future Volume (vph)	148	159	79	121	116	615
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	161	173	86	132	126	668

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	161	173	218	126	668
Volume Left (vph)	161	0	0	126	0
Volume Right (vph)	0	0	132	0	668
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.6	5.1	4.4	5.4	3.2
Degree Utilization, x	0.25	0.25	0.27	0.19	0.59
Capacity (veh/h)	626	686	777	619	1118
Control Delay (s)	9.3	8.5	9.1	9.6	10.8
Approach Delay (s)	8.9		9.1	10.6	
Approach LOS	A		A	B	

Intersection Summary			
Delay	9.9		
Level of Service	A		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	193	99	646	48	208	149
Future Volume (veh/h)	193	99	646	48	208	149
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	205	105	687	0	221	159
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	263	1094	1230		470	449
Arrive On Green	0.15	0.59	0.35	0.00	0.14	0.14
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	205	105	687	0	221	159
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	5.1	1.1	7.2	0.0	2.7	3.7
Cycle Q Clear(g_c), s	5.1	1.1	7.2	0.0	2.7	3.7
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	263	1094	1230		470	449
V/C Ratio(X)	0.78	0.10	0.56		0.47	0.35
Avail Cap(c_a), veh/h	766	2233	2392		1688	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	4.1	12.0	0.0	18.2	13.0
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.3	2.3	0.0	1.0	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.7	4.1	12.2	0.0	18.5	13.1
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		310	687	A	380	
Approach Delay, s/veh		15.0	12.2		16.2	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		32.9		12.8	11.0	21.9
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.1		5.7	7.1	9.2
Green Ext Time (p_c), s		0.4		0.6	0.2	3.2

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	2	187	0	0	6	282	186	2	4	570	139
Future Volume (veh/h)	86	2	187	0	0	6	282	186	2	4	570	139
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	92	0	197				297	196	2	4	600	146
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	736	0	513				432	1679	17	8	965	234
Arrive On Green	0.21	0.00	0.21				0.13	0.47	0.47	0.00	0.35	0.35
Sat Flow, veh/h	3534	0	1512				3428	3574	36	1767	2773	673
Grp Volume(v), veh/h	92	0	197				297	97	101	4	381	365
Grp Sat Flow(s),veh/h/ln	1767	0	1512				1714	1763	1847	1767	1763	1683
Q Serve(g_s), s	1.0	0.0	4.6				3.8	1.4	1.4	0.1	8.3	8.3
Cycle Q Clear(g_c), s	1.0	0.0	4.6				3.8	1.4	1.4	0.1	8.3	8.3
Prop In Lane	1.00		1.00				1.00		0.02	1.00		0.40
Lane Grp Cap(c), veh/h	736	0	513				432	828	868	8	614	586
V/C Ratio(X)	0.13	0.00	0.38				0.69	0.12	0.12	0.52	0.62	0.62
Avail Cap(c_a), veh/h	2307	0	1185				567	970	1017	196	874	835
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	11.7				19.2	6.8	6.8	22.8	12.5	12.5
Incr Delay (d2), s/veh	0.1	0.0	0.8				1.1	0.1	0.1	19.0	1.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	4.3				1.4	0.4	0.4	0.1	2.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	12.5				20.3	6.9	6.9	41.8	13.8	13.9
LnGrp LOS	B	A	B				C	A	A	D	B	B
Approach Vol, veh/h		289						495			750	
Approach Delay, s/veh		13.3						15.0			14.0	
Approach LOS		B						B			B	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	4.6	26.5		14.9	10.2	20.9
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.1	3.4		6.6	5.8	10.3
Green Ext Time (p_c), s	0.0	1.1		1.8	0.1	4.9

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	4	4	55	4	144	22	324	23	90	548	15
Future Volume (veh/h)	3	4	4	55	4	144	22	324	23	90	548	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	3	4	4	57	4	150	23	338	24	94	571	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	185	206	154	192	46	284	40	1397	97	118	1169	33
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.29	0.29	0.07	0.33	0.33
Sat Flow, veh/h	237	781	581	264	174	1075	1767	4815	336	1767	3497	98
Grp Volume(v), veh/h	11	0	0	211	0	0	23	235	127	94	288	299
Grp Sat Flow(s),veh/h/ln	1598	0	0	1513	0	0	1767	1689	1774	1767	1763	1832
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.5	2.0	2.0	2.0	4.9	4.9
Cycle Q Clear(g_c), s	0.2	0.0	0.0	4.3	0.0	0.0	0.5	2.0	2.0	2.0	4.9	4.9
Prop In Lane	0.27		0.36	0.27		0.71	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	545	0	0	522	0	0	40	980	515	118	589	612
V/C Ratio(X)	0.02	0.00	0.00	0.40	0.00	0.00	0.57	0.24	0.25	0.80	0.49	0.49
Avail Cap(c_a), veh/h	1357	0	0	1313	0	0	264	2259	1186	499	1414	1469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	0.0	0.0	11.7	0.0	0.0	18.2	10.2	10.2	17.3	9.9	9.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	4.7	0.2	0.3	4.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.2	0.0	0.0	0.2	0.6	0.7	0.8	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	0.0	11.9	0.0	0.0	22.9	10.3	10.5	21.8	10.8	10.7
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		11			211			385			681	
Approach Delay, s/veh		10.2			11.9			11.1			12.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	15.8		14.8	5.3	17.4		14.8
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	4.0	4.0		2.2	2.5	6.9		6.3
Green Ext Time (p_c), s	0.1	2.9		0.0	0.0	4.9		0.9

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Existing AM
5: Congress St & Taylor St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	293	68	96	510	0	57	0	80	0	0	0
Future Volume (veh/h)	0	293	68	96	510	0	57	0	80	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.76		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	302	70	99	526	0	59	0	82	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1192	261	132	1630	0	334	0	139	0	170	0
Arrive On Green	0.00	0.37	0.37	0.07	0.59	0.00	0.09	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	0	3365	708	1767	2849	0	1074	0	1519	0	1856	0
Grp Volume(v), veh/h	0	245	127	99	526	0	59	0	82	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1282	1767	1388	0	1074	0	1519	0	1856	0
Q Serve(g_s), s	0.0	2.0	2.1	1.7	2.9	0.0	1.6	0.0	1.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.0	2.1	1.7	2.9	0.0	1.6	0.0	1.6	0.0	0.0	0.0
Prop In Lane	0.00		0.55	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	980	472	132	1630	0	334	0	139	0	170	0
V/C Ratio(X)	0.00	0.25	0.27	0.75	0.32	0.00	0.18	0.00	0.59	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2188	1055	324	3194	0	1296	0	1499	0	1886	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.7	6.7	13.8	3.2	0.0	13.3	0.0	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.3	3.2	0.0	0.0	0.1	0.0	1.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.4	0.6	0.2	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	7.0	17.1	3.2	0.0	13.4	0.0	14.8	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		372			625			141			0	
Approach Delay, s/veh		6.9			5.4			14.2			0.0	
Approach LOS		A			A			B				
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.7	16.1		7.7		22.8		7.7				
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9				
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1				
Max Q Clear Time (g_c+I1), s	3.7	4.1		0.0		4.9		3.6				
Green Ext Time (p_c), s	0.0	2.2		0.0		2.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing AM
6: Pacific Hwy & Rosecrans St/Taylor St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	201	83	274	201	93	113	344	159	41	115	54
Future Volume (veh/h)	52	201	83	274	201	93	113	344	159	41	115	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.94	1.00		0.95	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	56	216	89	295	216	100	122	370	171	44	124	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	897	545	337	595	471	144	1061	510	51	902	354
Arrive On Green	0.04	0.32	0.32	0.12	0.41	0.41	0.08	0.30	0.30	0.04	0.26	0.26
Sat Flow, veh/h	1767	2776	1291	2699	1461	1158	1767	3526	1181	1391	3526	1382
Grp Volume(v), veh/h	56	216	89	295	216	100	122	370	171	44	124	58
Grp Sat Flow(s),veh/h/ln	1767	1388	1291	1350	1461	1158	1767	1763	1181	1391	1763	1382
Q Serve(g_s), s	3.4	6.2	4.8	11.7	11.2	6.1	7.4	8.9	10.6	3.4	3.0	3.6
Cycle Q Clear(g_c), s	3.4	6.2	4.8	11.7	11.2	6.1	7.4	8.9	10.6	3.4	3.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	897	545	337	595	471	144	1061	510	51	902	354
V/C Ratio(X)	0.78	0.24	0.16	0.88	0.36	0.21	0.85	0.35	0.34	0.86	0.14	0.16
Avail Cap(c_a), veh/h	152	919	556	337	595	471	144	1226	565	115	1229	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	27.1	20.7	46.9	22.5	21.0	49.4	29.8	21.0	52.2	31.3	31.5
Incr Delay (d2), s/veh	6.6	0.2	0.2	21.1	0.2	0.1	33.1	0.2	0.4	14.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.1	1.5	4.9	3.9	1.7	4.6	3.8	3.0	1.4	1.3	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	27.3	20.9	68.0	22.7	21.1	82.5	30.0	21.4	66.5	31.3	31.6
LnGrp LOS	E	C	C	E	C	C	F	C	C	E	C	C
Approach Vol, veh/h		361			611			663			226	
Approach Delay, s/veh		30.5			44.3			37.4			38.2	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	41.1	14.3	34.6	9.8	50.3	9.4	39.5				
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7				
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9				
Max Q Clear Time (g_c+I1), s	13.7	8.2	9.4	5.6	5.4	13.2	5.4	12.6				
Green Ext Time (p_c), s	0.0	2.2	0.0	0.6	0.0	1.1	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			38.4									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	10	19	320	325	43
Future Vol, veh/h	16	10	19	320	325	43
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	10	19	327	332	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	660	458	470	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	410	599	1084	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	333	540	987	-	-	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	987	-	391	-	-
HCM Lane V/C Ratio	0.02	-	0.068	-	-
HCM Control Delay (s)	8.7	-	14.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	122	63	70	1333	0	0	2088	258
Future Volume (veh/h)	0	0	0	12	122	63	70	1333	0	0	2088	258
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.93	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				12	126	65	72	1374	0	0	2153	266
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				34	360	185	460	3823	0	0	2313	690
Arrive On Green				0.17	0.17	0.17	0.52	1.00	0.00	0.00	0.46	0.46
Sat Flow, veh/h				202	2120	1090	1767	5233	0	0	5233	1512
Grp Volume(v), veh/h				110	0	93	72	1374	0	0	2153	266
Grp Sat Flow(s),veh/h/ln				1845	0	1567	1767	1689	0	0	1689	1512
Q Serve(g_s), s				6.8	0.0	6.8	2.8	0.0	0.0	0.0	52.2	15.1
Cycle Q Clear(g_c), s				6.8	0.0	6.8	2.8	0.0	0.0	0.0	52.2	15.1
Prop In Lane				0.11		0.70	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				314	0	266	460	3823	0	0	2313	690
V/C Ratio(X)				0.35	0.00	0.35	0.16	0.36	0.00	0.00	0.93	0.39
Avail Cap(c_a), veh/h				625	0	530	460	3823	0	0	2463	735
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.83	0.83	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.6	0.0	47.6	23.7	0.0	0.0	0.0	33.4	23.3
Incr Delay (d2), s/veh				0.2	0.0	0.3	0.0	0.2	0.0	0.0	8.3	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	2.7	1.1	0.1	0.0	0.0	22.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.9	0.0	47.9	23.8	0.2	0.0	0.0	41.7	24.9
LnGrp LOS				D	A	D	C	A	A	A	D	C
Approach Vol, veh/h					203			1446			2419	
Approach Delay, s/veh					47.9			1.4			39.8	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	103.0	27.0	38.7	64.3
Change Period (Y+Rc), s	4.9	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	76.2	44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s	2.0	8.8	4.8	54.2
Green Ext Time (p_c), s	4.4	0.4	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	101	49	0	0	0	0	1493	11	191	2031	0
Future Volume (veh/h)	121	101	49	0	0	0	0	1493	11	191	2031	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	116	121	52				0	1572	12	201	2138	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	219	230	185				0	3323	25	222	5110	0
Arrive On Green	0.12	0.12	0.12				0.00	1.00	1.00	0.25	1.00	0.00
Sat Flow, veh/h	1767	1856	1489				0	5352	40	1767	6643	0
Grp Volume(v), veh/h	116	121	52				0	1024	560	201	2138	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1489				0	1689	1847	1767	1596	0
Q Serve(g_s), s	8.0	7.9	4.1				0.0	0.0	0.0	14.3	0.0	0.0
Cycle Q Clear(g_c), s	8.0	7.9	4.1				0.0	0.0	0.0	14.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	219	230	185				0	2164	1184	222	5110	0
V/C Ratio(X)	0.53	0.53	0.28				0.00	0.47	0.47	0.90	0.42	0.00
Avail Cap(c_a), veh/h	613	644	517				0	2164	1184	294	5110	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.81	0.81	0.73	0.73	0.00
Uniform Delay (d), s/veh	53.4	53.4	51.7				0.0	0.0	0.0	47.9	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.7	0.3				0.0	0.6	1.1	16.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.8	1.6				0.0	0.2	0.4	6.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	54.0	52.0				0.0	0.6	1.1	64.7	0.2	0.0
LnGrp LOS	D	D	D				A	A	A	E	A	A
Approach Vol, veh/h		289						1584			2339	
Approach Delay, s/veh		53.7						0.8			5.7	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	20.8	88.2	21.0	109.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	16.3	2.0	10.0	2.0
Green Ext Time (p_c), s	0.0	4.5	0.3	9.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	176	5	115	0	189	0	278	116	48	224	0
Future Volume (veh/h)	64	176	5	115	0	189	0	278	116	48	224	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.85	0.95		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	69	189	5	124	0	203	0	299	125	52	241	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	365	371	10	0	0	0	0	926	369	531	1942	0
Arrive On Green	0.21	0.21	0.21	0.00	0.00	0.00	0.00	0.40	0.40	0.04	0.55	0.00
Sat Flow, veh/h	1767	1796	48		0		0	2419	926	1767	3618	0
Grp Volume(v), veh/h	69	0	194		0.0		0	223	201	52	241	0
Grp Sat Flow(s),veh/h/ln	1767	0	1844				0	1763	1490	1767	1763	0
Q Serve(g_s), s	1.3	0.0	3.8				0.0	3.5	3.8	0.6	1.3	0.0
Cycle Q Clear(g_c), s	1.3	0.0	3.8				0.0	3.5	3.8	0.6	1.3	0.0
Prop In Lane	1.00		0.03				0.00		0.62	1.00		0.00
Lane Grp Cap(c), veh/h	365	0	380				0	702	593	531	1942	0
V/C Ratio(X)	0.19	0.00	0.51				0.00	0.32	0.34	0.10	0.12	0.00
Avail Cap(c_a), veh/h	1012	0	1056				0	1053	890	699	2979	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	14.2				0.0	8.4	8.5	5.8	4.4	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.1				0.0	1.2	1.5	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4				0.0	1.2	1.1	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	15.3				0.0	9.6	10.0	5.8	4.5	0.0
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h		263						424			293	
Approach Delay, s/veh		14.8						9.8			4.7	
Approach LOS		B						A			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	6.2	21.0	13.2	27.1
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	2.6	5.8	5.8	3.3
Green Ext Time (p_c), s	0.0	6.4	1.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	152	113	155	158	16	113	1362	246	0	1735	308
Future Volume (veh/h)	161	152	113	155	158	16	113	1362	246	0	1735	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.95	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	184	139	119	115	233	17	119	1434	259	0	1826	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	757	398	303	152	293	21	140	2423	437	0	2438	
Arrive On Green	0.21	0.21	0.21	0.09	0.09	0.09	0.08	1.00	1.00	0.00	0.96	0.00
Sat Flow, veh/h	3534	1856	1412	1767	3405	246	3428	4298	775	0	5233	1572
Grp Volume(v), veh/h	184	139	119	115	126	124	119	1126	567	0	1826	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1412	1767	1856	1796	1714	1689	1696	0	1689	1572
Q Serve(g_s), s	5.6	8.3	9.4	8.3	8.7	8.8	4.5	0.0	0.0	0.0	6.3	0.0
Cycle Q Clear(g_c), s	5.6	8.3	9.4	8.3	8.7	8.8	4.5	0.0	0.0	0.0	6.3	0.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.46	0.00		1.00
Lane Grp Cap(c), veh/h	757	398	303	152	159	154	140	1903	956	0	2438	
V/C Ratio(X)	0.24	0.35	0.39	0.76	0.79	0.80	0.85	0.59	0.59	0.00	0.75	
Avail Cap(c_a), veh/h	979	514	391	245	257	249	140	1903	956	0	2438	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.97	0.97	0.80	0.80	0.80	0.00	0.89	0.00
Uniform Delay (d), s/veh	42.3	43.4	43.8	58.1	58.3	58.3	59.3	0.0	0.0	0.0	1.4	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.3	2.8	3.2	3.6	29.7	1.1	2.2	0.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.9	3.3	3.8	4.2	4.2	2.4	0.3	0.6	0.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	43.6	44.1	60.9	61.4	61.9	89.0	1.1	2.2	0.0	3.3	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	A	
Approach Vol, veh/h		442			365			1812			1826	A
Approach Delay, s/veh		43.2			61.4			7.2			3.3	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		79.2		33.8	10.7	68.5		17.1				
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9				
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0				
Max Q Clear Time (g_c+I1), s		2.0		11.4	6.5	8.3		10.8				
Green Ext Time (p_c), s		5.2		0.5	0.0	6.7		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			13.6
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	196	115	73	304	148	143	1312	68	206	1400	116
Future Volume (veh/h)	196	196	115	73	304	148	143	1312	68	206	1400	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	204	204	120	76	317	154	149	1367	71	215	1458	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	255	637	273	96	552	231	199	1518	79	1041	2653	220
Arrive On Green	0.07	0.18	0.18	0.05	0.16	0.16	0.06	0.31	0.31	0.61	1.00	1.00
Sat Flow, veh/h	3428	3526	1509	1767	3526	1474	3428	4922	256	3428	4757	395
Grp Volume(v), veh/h	204	204	120	76	317	154	149	938	500	215	1035	544
Grp Sat Flow(s),veh/h/ln	1714	1763	1509	1767	1763	1474	1714	1689	1801	1714	1689	1774
Q Serve(g_s), s	7.6	6.5	9.2	5.5	10.8	12.8	5.6	34.6	34.6	3.7	0.0	0.0
Cycle Q Clear(g_c), s	7.6	6.5	9.2	5.5	10.8	12.8	5.6	34.6	34.6	3.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.22
Lane Grp Cap(c), veh/h	255	637	273	96	552	231	199	1041	555	1041	1884	990
V/C Ratio(X)	0.80	0.32	0.44	0.79	0.57	0.67	0.75	0.90	0.90	0.21	0.55	0.55
Avail Cap(c_a), veh/h	359	881	377	171	854	357	282	1343	716	1041	1884	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.66	0.66	0.66
Uniform Delay (d), s/veh	59.2	46.3	47.4	60.8	50.8	51.6	60.3	43.1	43.1	18.5	0.0	0.0
Incr Delay (d2), s/veh	5.5	0.1	0.4	5.4	0.4	1.2	2.5	9.3	15.7	0.0	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.9	3.5	2.6	4.8	4.8	2.5	15.6	17.6	1.4	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	46.4	47.8	66.2	51.2	52.9	62.8	52.4	58.7	18.5	0.8	1.5
LnGrp LOS	E	D	D	E	D	D	E	D	E	B	A	A
Approach Vol, veh/h		528			547			1587			1794	
Approach Delay, s/veh		53.8			53.7			55.4			3.1	
Approach LOS		D			D			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.2	45.0	11.5	28.4	12.0	78.2	14.6	25.3				
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9				
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32				
Max Q Clear Time (g_c+I1), s	15.7	36.6	7.5	11.2	7.6	2.0	9.6	14.8				
Green Ext Time (p_c), s	0.1	3.5	0.0	0.5	0.0	4.6	0.1	0.8				

Intersection Summary			
HCM 6th Ctrl Delay			33.9
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	314	7	599	328	110	7	1051	500	113	1475	213
Future Volume (veh/h)	358	314	7	599	328	110	7	1051	500	113	1475	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	365	320	7	611	335	112	7	1072	510	115	1505	217
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	371	8	612	382	312	15	2126	644	162	1616	693
Arrive On Green	0.17	0.21	0.21	0.18	0.21	0.21	0.01	0.42	0.42	0.09	0.92	0.92
Sat Flow, veh/h	1767	1807	40	3428	1856	1515	1767	5066	1534	3428	3526	1512
Grp Volume(v), veh/h	365	0	327	611	335	112	7	1072	510	115	1505	217
Grp Sat Flow(s),veh/h/ln	1767	0	1847	1714	1856	1515	1767	1689	1534	1714	1763	1512
Q Serve(g_s), s	22.6	0.0	22.2	23.2	22.7	7.0	0.5	20.3	37.6	4.2	31.6	1.2
Cycle Q Clear(g_c), s	22.6	0.0	22.2	23.2	22.7	7.0	0.5	20.3	37.6	4.2	31.6	1.2
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	379	612	382	312	15	2126	644	162	1616	693
V/C Ratio(X)	1.19	0.00	0.86	1.00	0.88	0.36	0.46	0.50	0.79	0.71	0.93	0.31
Avail Cap(c_a), veh/h	307	0	474	612	485	396	69	2126	644	232	1616	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	53.7	0.0	49.9	53.4	50.0	32.0	64.1	27.8	32.8	58.0	4.2	0.8
Incr Delay (d2), s/veh	112.5	0.0	10.8	34.2	10.8	0.2	7.9	0.9	9.6	1.7	9.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.6	0.0	11.4	12.9	11.7	2.6	0.3	8.3	15.5	1.8	4.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	166.2	0.0	60.7	87.5	60.8	32.2	72.0	28.6	42.4	59.7	13.5	1.8
LnGrp LOS	F	A	E	F	E	C	E	C	D	E	B	A
Approach Vol, veh/h		692			1058			1589			1837	
Approach Delay, s/veh		116.4			73.2			33.2			15.0	
Approach LOS		F			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	60.3	27.6	31.6	5.5	65.3	27.5	31.7
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.2	39.6	25.2	24.2	2.5	33.6	24.6	24.7
Green Ext Time (p_c), s	0.0	2.1	0.0	0.5	0.0	4.5	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	697	177	554	853	79	156
Future Volume (veh/h)	697	177	554	853	79	156
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	734	186	583	898	83	164
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	906	230	560	2432	105	208
Arrive On Green	0.33	0.33	0.32	0.69	0.20	0.20
Sat Flow, veh/h	2848	698	1767	3618	539	1065
Grp Volume(v), veh/h	470	450	583	898	248	0
Grp Sat Flow(s),veh/h/ln	1763	1690	1767	1763	1611	0
Q Serve(g_s), s	21.9	21.9	28.5	9.5	13.2	0.0
Cycle Q Clear(g_c), s	21.9	21.9	28.5	9.5	13.2	0.0
Prop In Lane		0.41	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	580	556	560	2432	315	0
V/C Ratio(X)	0.81	0.81	1.04	0.37	0.79	0.00
Avail Cap(c_a), veh/h	580	556	560	2432	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	27.6	30.7	5.8	34.4	0.0
Incr Delay (d2), s/veh	8.9	9.2	49.4	0.4	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	10.0	19.3	3.1	5.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.5	36.9	80.1	6.2	38.1	0.0
LnGrp LOS	D	D	F	A	D	A
Approach Vol, veh/h	920			1481	248	
Approach Delay, s/veh	36.7			35.3	38.1	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	32.5	35.0				67.5		22.5
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	23.9				11.5		15.2
Green Ext Time (p_c), s	0.0	0.0				7.9		0.3

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	176	489	7	0	359
Future Vol, veh/h	0	176	489	7	0	359
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	202	562	8	0	413

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	305	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	688	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	675	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	675	-
HCM Lane V/C Ratio	-	-	0.3	-
HCM Control Delay (s)	-	-	12.6	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	1.3	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	858	1313	496	312	47
Future Volume (veh/h)	0	858	1313	496	312	47
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	876	1340	506	318	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1847	1847	1153	783	
Arrive On Green	0.00	0.52	0.52	0.52	0.23	0.00
Sat Flow, veh/h	0	3711	3618	1515	3428	1572
Grp Volume(v), veh/h	0	876	1340	506	318	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1515	1714	1572
Q Serve(g_s), s	0.0	6.7	12.5	5.3	3.4	0.0
Cycle Q Clear(g_c), s	0.0	6.7	12.5	5.3	3.4	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1847	1847	1153	783	
V/C Ratio(X)	0.00	0.47	0.73	0.44	0.41	
Avail Cap(c_a), veh/h	0	2093	2093	1259	1923	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	7.8	2.0	14.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	1.1	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	3.3	2.2	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.6	8.9	2.2	14.3	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		876	1846		318	A
Approach Delay, s/veh		6.6	7.1		14.3	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		27.8		15.0		27.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		8.7		5.4		14.5
Green Ext Time (p_c), s		5.6		0.8		7.9

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	11	29	1	37	78	518	37	121	307	40
Future Volume (veh/h)	6	0	11	29	1	37	78	518	37	121	307	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.98		0.95	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	7	0	13	34	1	44	92	609	44	142	361	47
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	181	40	149	418	5	222	120	1547	111	181	1613	204
Arrive On Green	0.15	0.00	0.15	0.15	0.15	0.15	0.07	0.32	0.32	0.10	0.36	0.36
Sat Flow, veh/h	266	265	986	1364	33	1473	1767	4807	344	1767	4526	573
Grp Volume(v), veh/h	20	0	0	34	0	45	92	426	227	142	267	141
Grp Sat Flow(s),veh/h/ln	1516	0	0	1364	0	1507	1767	1689	1774	1767	1689	1721
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.9	1.8	3.4	3.4	2.7	1.9	2.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.6	0.0	0.9	1.8	3.4	3.4	2.7	1.9	2.0
Prop In Lane	0.35		0.65	1.00		0.98	1.00		0.19	1.00		0.33
Lane Grp Cap(c), veh/h	369	0	0	418	0	227	120	1087	571	181	1203	613
V/C Ratio(X)	0.05	0.00	0.00	0.08	0.00	0.20	0.77	0.39	0.40	0.78	0.22	0.23
Avail Cap(c_a), veh/h	1481	0	0	1474	0	1394	342	2031	1067	388	2109	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	12.7	0.0	12.9	15.8	9.1	9.1	15.1	7.8	7.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.2	3.8	0.3	0.6	2.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.2	0.0	0.3	0.7	0.9	1.0	1.0	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	0.0	12.8	0.0	13.0	19.7	9.4	9.7	18.0	7.9	8.0
LnGrp LOS	B	A	A	B	A	B	B	A	A	B	A	A
Approach Vol, veh/h		20			79			745			550	
Approach Delay, s/veh		12.7			12.9			10.8			10.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	16.5		10.1	6.7	17.7		10.1
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	4.7	5.4		2.4	3.8	4.0		2.9
Green Ext Time (p_c), s	0.0	4.8		0.0	0.0	2.7		0.2

Intersection Summary		
HCM 6th Ctrl Delay		10.8
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	257	380	638	338	6
Future Vol, veh/h	0	257	380	638	338	6
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	286	422	709	376	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	212	393	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	673	756	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	660	749	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	5.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	749	-	660	-	-
HCM Lane V/C Ratio	0.564	-	0.433	-	-
HCM Control Delay (s)	15.8	-	14.5	-	-
HCM Lane LOS	C	-	B	-	-
HCM 95th %tile Q(veh)	3.6	-	2.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	31	0	1047	547	48
Future Vol, veh/h	0	31	0	1047	547	48
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	36	0	1203	629	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	362	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	632	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	620	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	620	-	-
HCM Lane V/C Ratio	-	0.057	-	-
HCM Control Delay (s)	-	11.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	15	15	20	26	8	335	1026	256	112	335	131
Future Volume (veh/h)	13	15	15	20	26	8	335	1026	256	112	335	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.70	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	14	17	17	22	29	9	372	1140	284	124	372	146
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	22	633	536	31	642	382	285	1254	520	146	699	269
Arrive On Green	0.01	0.34	0.34	0.02	0.35	0.35	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1105	1767	3526	1460	1767	2448	942
Grp Volume(v), veh/h	14	17	17	22	29	9	372	1140	284	124	266	252
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1105	1767	1763	1460	1767	1763	1628
Q Serve(g_s), s	0.9	0.7	0.8	1.4	1.2	0.6	18.6	35.4	17.9	8.0	14.6	15.1
Cycle Q Clear(g_c), s	0.9	0.7	0.8	1.4	1.2	0.6	18.6	35.4	17.9	8.0	14.6	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	22	633	536	31	642	382	285	1254	520	146	503	465
V/C Ratio(X)	0.63	0.03	0.03	0.71	0.05	0.02	1.30	0.91	0.55	0.85	0.53	0.54
Avail Cap(c_a), veh/h	78	633	537	89	645	384	285	1286	533	146	534	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	25.2	25.3	56.3	25.0	24.8	48.3	35.3	29.7	52.1	34.6	34.8
Incr Delay (d2), s/veh	10.5	0.0	0.0	10.5	0.0	0.0	159.6	9.7	1.3	33.9	2.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.3	0.7	0.5	0.2	20.8	16.6	6.4	4.9	6.6	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.1	25.2	25.3	66.8	25.0	24.8	207.9	45.0	31.0	86.0	37.0	37.5
LnGrp LOS	E	C	C	E	C	C	F	D	C	F	D	D
Approach Vol, veh/h		48			60			1796			642	
Approach Delay, s/veh		37.5			40.3			76.5			46.7	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	49.7	6.4	44.2	23.0	41.6	5.8	44.7
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.0	37.4	3.4	2.8	20.6	17.1	2.9	3.2
Green Ext Time (p_c), s	0.0	3.5	0.0	0.1	0.0	5.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	67.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	166.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱	↰	↑↑	↑↑	↱
Traffic Vol, veh/h	0	1168	1665	1617	294	76
Future Vol, veh/h	0	1168	1665	1617	294	76
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1270	1810	1758	320	83

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	180	413	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 829	~ 1135	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 813	~ 1124	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	273.9	147.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 1124	-	813	-	-
HCM Lane V/C Ratio	1.61	-	1.562	-	-
HCM Control Delay (s)	291	-	273.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	93	-	64.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			✥			✥	
Traffic Volume (veh/h)	2	34	63	207	129	6	163	54	130	1	22	5
Future Volume (veh/h)	2	34	63	207	129	6	163	54	130	1	22	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.93	0.98		0.94	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	3	44	82	269	168	8	212	70	169	1	29	6
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	540	202	376	569	640	30	373	118	211	100	557	112
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1177	552	1028	1224	1751	83	620	312	559	9	1475	297
Grp Volume(v), veh/h	3	0	126	269	0	176	451	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	1177	0	1580	1224	0	1835	1491	0	0	1781	0	0
Q Serve(g_s), s	0.1	0.0	2.1	7.4	0.0	2.6	8.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	2.1	9.5	0.0	2.6	10.2	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.05	0.47		0.37	0.03		0.17
Lane Grp Cap(c), veh/h	540	0	577	569	0	670	702	0	0	769	0	0
V/C Ratio(X)	0.01	0.00	0.22	0.47	0.00	0.26	0.64	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	853	0	998	895	0	1159	1152	0	0	1308	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	8.3	11.6	0.0	8.5	10.5	0.0	0.0	7.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.7	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	1.6	0.0	0.8	2.5	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	0.0	8.7	12.3	0.0	8.7	10.8	0.0	0.0	7.5	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		129			445			451			36	
Approach Delay, s/veh		8.7			10.9			10.8			7.5	
Approach LOS		A			B			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.8		19.3		18.8		19.3				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		24.1		26.1		24.1		26.1				
Max Q Clear Time (g_c+I1), s		4.6		2.5		11.5		12.2				
Green Ext Time (p_c), s		1.0		0.1		1.8		1.8				

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

23: Old Town Ave & Moore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	8	25	200	211	97	313	30	0	147	168
Future Volume (veh/h)	0	0	8	25	200	211	97	313	30	0	147	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	10	31	247	260	120	386	37	0	181	207
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	562	96	288	285	182	459	40	0	342	391
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	48	806	799	208	1042	91	0	776	888
Grp Volume(v), veh/h	0	0	10	538	0	0	543	0	0	0	0	388
Grp Sat Flow(s),veh/h/ln	0	0	1572	1653	0	0	1341	0	0	0	0	1664
Q Serve(g_s), s	0.0	0.0	0.2	6.5	0.0	0.0	10.8	0.0	0.0	0.0	0.0	8.2
Cycle Q Clear(g_c), s	0.0	0.0	0.2	15.0	0.0	0.0	19.0	0.0	0.0	0.0	0.0	8.2
Prop In Lane	0.00		1.00	0.06		0.48	0.22		0.07	0.00		0.53
Lane Grp Cap(c), veh/h	0	0	562	669	0	0	681	0	0	0	0	733
V/C Ratio(X)	0.00	0.00	0.02	0.80	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.53
Avail Cap(c_a), veh/h	0	0	587	696	0	0	706	0	0	0	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.1	14.8	0.0	0.0	13.2	0.0	0.0	0.0	0.0	9.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	6.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	5.7	0.0	0.0	5.6	0.0	0.0	0.0	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.1	20.8	0.0	0.0	18.8	0.0	0.0	0.0	0.0	10.2
LnGrp LOS	A	A	B	C	A	A	B	A	A	A	A	B
Approach Vol, veh/h		10			538			543			388	
Approach Delay, s/veh		10.1			20.8			18.8			10.2	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.2	22.2	26.2	22.2
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	21.0	2.2	10.2	17.0
Green Ext Time (p_c), s	0.3	0.0	1.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

24: Hancock St/Old Town Ave & I-5 SB Off-Ramp

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	286	581	0	84	49	0
Future Vol, veh/h	286	581	0	84	49	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	340	692	0	100	58	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	20.9	10	9.6
HCM LOS	C	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	286	581	49
LT Vol	0	286	0	0
Through Vol	84	0	0	49
RT Vol	0	0	581	0
Lane Flow Rate	100	340	692	58
Geometry Grp	2	7	7	2
Degree of Util (X)	0.161	0.522	0.828	0.095
Departure Headway (Hd)	5.809	5.515	4.31	5.886
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	654	837	607
Service Time	3.858	3.245	2.04	3.94
HCM Lane V/C Ratio	0.162	0.52	0.827	0.096
HCM Control Delay	10	14.1	24.2	9.6
HCM Lane LOS	A	B	C	A
HCM 95th-tile Q	0.6	3	9.4	0.3

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	147	495	12	24	1	72	1	65	1	1	2
Future Vol, veh/h	4	147	495	12	24	1	72	1	65	1	1	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	167	563	14	27	1	82	1	74	1	1	2
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	14.2	8.6	9.9	8.6
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	52%	3%	0%	32%	25%
Vol Thru, %	1%	97%	0%	65%	25%
Vol Right, %	47%	0%	100%	3%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	151	495	37	4
LT Vol	72	4	0	12	1
Through Vol	1	147	0	24	1
RT Vol	65	0	495	1	2
Lane Flow Rate	157	172	562	42	5
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.23	0.24	0.676	0.061	0.007
Departure Headway (Hd)	5.276	5.041	4.325	5.211	5.461
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	677	712	833	684	651
Service Time	3.327	2.774	2.057	3.268	3.532
HCM Lane V/C Ratio	0.232	0.242	0.675	0.061	0.008
HCM Control Delay	9.9	9.4	15.6	8.6	8.6
HCM Lane LOS	A	A	C	A	A
HCM 95th-tile Q	0.9	0.9	5.4	0.2	0

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	90	71	104	210	298
Future Vol, veh/h	34	90	71	104	210	298
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	35	94	74	108	219	310
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.2	9.6	13.6
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	41%	100%	0%	0%
Vol Thru, %	59%	0%	0%	41%
Vol Right, %	0%	0%	100%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	175	34	90	508
LT Vol	71	34	0	0
Through Vol	104	0	0	210
RT Vol	0	0	90	298
Lane Flow Rate	182	35	94	529
Geometry Grp	2	7	7	2
Degree of Util (X)	0.249	0.065	0.139	0.613
Departure Headway (Hd)	4.925	6.569	5.354	4.172
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	542	665	863
Service Time	2.978	4.346	3.13	2.206
HCM Lane V/C Ratio	0.251	0.065	0.141	0.613
HCM Control Delay	9.6	9.8	9	13.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1	0.2	0.5	4.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	0	110	0	65	25	15	285	0
Future Vol, veh/h	0	0	0	3	0	110	0	65	25	15	285	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	3	0	124	0	73	28	17	320	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	8.2	8.1	10.7
HCM LOS	-	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	3%	5%
Vol Thru, %	100%	0%	100%	0%	95%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	25	0	113	300
LT Vol	0	0	0	3	15
Through Vol	65	0	0	0	285
RT Vol	0	25	0	110	0
Lane Flow Rate	73	28	0	127	337
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.104	0.034	0	0.154	0.418
Departure Headway (Hd)	5.102	4.398	5.125	4.376	4.465
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	703	814	0	820	809
Service Time	2.829	2.124	3.16	2.398	2.487
HCM Lane V/C Ratio	0.104	0.034	0	0.155	0.417
HCM Control Delay	8.4	7.3	8.2	8.2	10.7
HCM Lane LOS	A	A	N	A	B
HCM 95th-tile Q	0.3	0.1	0	0.5	2.1

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	50	43	0	0	0	25	16	45	189	48	0
Future Vol, veh/h	73	50	43	0	0	0	25	16	45	189	48	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	76	52	45	0	0	0	26	17	47	197	50	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9	8	9.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	44%	80%
Vol Thru, %	19%	30%	20%
Vol Right, %	52%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	86	166	237
LT Vol	25	73	189
Through Vol	16	50	48
RT Vol	45	43	0
Lane Flow Rate	90	173	247
Geometry Grp	1	1	1
Degree of Util (X)	0.109	0.224	0.318
Departure Headway (Hd)	4.4	4.666	4.63
Convergence, Y/N	Yes	Yes	Yes
Cap	813	769	778
Service Time	2.431	2.694	2.655
HCM Lane V/C Ratio	0.111	0.225	0.317
HCM Control Delay	8	9	9.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.9	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	238	13	139	517	0	0	675	562
Future Volume (veh/h)	0	0	0	125	238	13	139	517	0	0	675	562
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				132	251	14	146	544	0	0	711	592
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				240	508	28	881	2595	0	0	1484	645
Arrive On Green				0.15	0.15	0.15	0.51	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1630	3448	192	3428	3618	0	0	3618	1532
Grp Volume(v), veh/h				144	122	132	146	544	0	0	711	592
Grp Sat Flow(s),veh/h/ln				1774	1689	1807	1714	1763	0	0	1763	1532
Q Serve(g_s), s				6.3	5.6	5.6	1.9	0.0	0.0	0.0	12.3	30.6
Cycle Q Clear(g_c), s				6.3	5.6	5.6	1.9	0.0	0.0	0.0	12.3	30.6
Prop In Lane				0.92		0.11	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				261	249	266	881	2595	0	0	1484	645
V/C Ratio(X)				0.55	0.49	0.50	0.17	0.21	0.00	0.00	0.48	0.92
Avail Cap(c_a), veh/h				551	525	562	881	2595	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.2	32.9	32.9	15.6	0.0	0.0	0.0	17.6	23.0
Incr Delay (d2), s/veh				0.7	0.6	0.5	0.1	0.2	0.0	0.0	1.1	20.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.7	2.3	2.5	0.7	0.1	0.0	0.0	5.0	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.9	33.5	33.5	15.7	0.2	0.0	0.0	18.8	43.1
LnGrp LOS				C	C	C	B	A	A	A	B	D
Approach Vol, veh/h					397			690			1303	
Approach Delay, s/veh					33.6			3.5			29.8	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		66.7			26.5	40.3		17.3
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1
Max Q Clear Time (g_c+I1), s		2.0			3.9	32.6		8.3
Green Ext Time (p_c), s		5.1			0.1	2.7		1.4

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	222	144	0	0	0	0	248	67	382	418	0
Future Volume (veh/h)	408	222	144	0	0	0	0	248	67	382	418	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	421	229	148				0	256	69	394	431	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	680	357	228				0	1406	612	481	1950	0
Arrive On Green	0.19	0.19	0.19				0.00	0.50	0.50	0.14	0.69	0.00
Sat Flow, veh/h	3534	1856	1187				0	2897	1228	3428	2897	0
Grp Volume(v), veh/h	421	229	148				0	256	69	394	431	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1187				0	1411	1228	1714	1411	0
Q Serve(g_s), s	9.2	9.6	9.7				0.0	4.2	2.5	9.4	4.7	0.0
Cycle Q Clear(g_c), s	9.2	9.6	9.7				0.0	4.2	2.5	9.4	4.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	680	357	228				0	1406	612	481	1950	0
V/C Ratio(X)	0.62	0.64	0.65				0.00	0.18	0.11	0.82	0.22	0.00
Avail Cap(c_a), veh/h	1140	599	383				0	1406	612	678	1950	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	31.1	31.3	31.3				0.0	11.6	11.2	35.1	4.7	0.0
Incr Delay (d2), s/veh	0.3	0.7	1.2				0.0	0.3	0.4	3.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.2	2.8				0.0	1.3	0.7	4.1	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	32.0	32.5				0.0	11.9	11.6	38.6	5.0	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		798						325			825	
Approach Delay, s/veh		31.8						11.8			21.0	
Approach LOS		C						B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.2	46.8		21.1		62.9
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1
Max Q Clear Time (g_c+I1), s	11.4	6.2		11.7		6.7
Green Ext Time (p_c), s	0.4	2.1		1.8		3.6

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	21	12	10	31	46	274	0	0	519	43
Future Volume (veh/h)	10	0	21	12	10	31	46	274	0	0	519	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.92	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	10	0	22	12	10	32	48	285	0	0	541	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	15	0	33	198	208	162	72	1413	0	0	991	428
Arrive On Green	0.03	0.00	0.03	0.11	0.11	0.11	0.04	0.50	0.00	0.00	0.35	0.35
Sat Flow, veh/h	503	0	1106	1767	1856	1439	1767	2897	0	0	2897	1219
Grp Volume(v), veh/h	32	0	0	12	10	32	48	285	0	0	541	45
Grp Sat Flow(s),veh/h/ln	1609	0	0	1767	1856	1439	1767	1411	0	0	1411	1219
Q Serve(g_s), s	0.8	0.0	0.0	0.3	0.2	0.8	1.1	2.3	0.0	0.0	6.4	1.0
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.3	0.2	0.8	1.1	2.3	0.0	0.0	6.4	1.0
Prop In Lane	0.31		0.69	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	48	0	0	198	208	162	72	1413	0	0	991	428
V/C Ratio(X)	0.67	0.00	0.00	0.06	0.05	0.20	0.66	0.20	0.00	0.00	0.55	0.11
Avail Cap(c_a), veh/h	155	0	0	1109	1164	903	290	3106	0	0	2309	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	0.0	16.4	16.4	16.7	19.6	5.7	0.0	0.0	10.8	9.1
Incr Delay (d2), s/veh	5.9	0.0	0.0	0.0	0.0	0.2	11.8	0.0	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.1	0.1	0.2	0.6	0.5	0.0	0.0	1.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	0.0	0.0	16.5	16.5	16.9	31.4	5.8	0.0	0.0	11.4	9.2
LnGrp LOS	C	A	A	B	B	B	C	A	A	A	B	A
Approach Vol, veh/h		32			54			333			586	
Approach Delay, s/veh		25.8			16.7			9.5			11.2	
Approach LOS		C			B			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		25.2		5.2	6.2	19.0		11.1				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		4.3		2.8	3.1	8.4		2.8				
Green Ext Time (p_c), s		1.3		0.0	0.0	4.8		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		11.4
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	24	56	0	0	0	0	153	19	82	170	0
Future Volume (veh/h)	167	24	56	0	0	0	0	153	19	82	170	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	205	0	62				0	170	21	91	189	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1081	0	655				0	373	45	205	476	0
Arrive On Green	0.31	0.00	0.31				0.00	0.12	0.12	0.13	0.13	0.00
Sat Flow, veh/h	3534	0	1527				0	3221	378	1549	3773	0
Grp Volume(v), veh/h	205	0	62				0	94	97	104	176	0
Grp Sat Flow(s),veh/h/ln	1767	0	1527				0	1763	1744	1778	1689	0
Q Serve(g_s), s	1.4	0.0	0.8				0.0	1.6	1.7	1.8	1.6	0.0
Cycle Q Clear(g_c), s	1.4	0.0	0.8				0.0	1.6	1.7	1.8	1.6	0.0
Prop In Lane	1.00		1.00				0.00		0.22	0.87		0.00
Lane Grp Cap(c), veh/h	1081	0	655				0	210	208	235	446	0
V/C Ratio(X)	0.19	0.00	0.09				0.00	0.45	0.47	0.44	0.39	0.00
Avail Cap(c_a), veh/h	3163	0	1554				0	754	746	391	743	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	5.6				0.0	13.4	13.5	13.1	13.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0				0.0	0.6	0.6	1.5	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2				0.0	0.5	0.6	0.7	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	0.0	5.7				0.0	14.0	14.1	14.6	13.6	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		267						191			280	
Approach Delay, s/veh		7.8						14.0			14.0	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				7.9		16.2		8.6				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				3.7		3.4		3.8				
Green Ext Time (p_c), s				0.5		0.5		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		11.7
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	97	57	208	233	67	111	178	30	39	211	26
Future Volume (veh/h)	13	97	57	208	233	67	111	178	30	39	211	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	15	111	66	239	268	77	128	205	34	45	243	30
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	26	238	233	279	377	108	163	1171	185	53	966	115
Arrive On Green	0.01	0.15	0.15	0.19	0.33	0.33	0.09	0.27	0.27	0.04	0.21	0.21
Sat Flow, veh/h	1767	1537	1502	1464	1140	327	1767	4374	690	1464	4559	543
Grp Volume(v), veh/h	15	111	66	239	0	345	128	156	83	45	178	95
Grp Sat Flow(s),veh/h/ln	1767	1537	1502	1464	0	1467	1767	1689	1687	1464	1689	1725
Q Serve(g_s), s	0.5	3.6	2.1	8.6	0.0	11.2	3.8	1.9	2.1	1.7	2.4	2.5
Cycle Q Clear(g_c), s	0.5	3.6	2.1	8.6	0.0	11.2	3.8	1.9	2.1	1.7	2.4	2.5
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.41	1.00		0.32
Lane Grp Cap(c), veh/h	26	238	233	279	0	485	163	904	452	53	715	365
V/C Ratio(X)	0.57	0.47	0.28	0.86	0.00	0.71	0.78	0.17	0.18	0.85	0.25	0.26
Avail Cap(c_a), veh/h	166	908	887	313	0	1043	215	1826	912	219	1920	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	20.9	20.2	21.2	0.0	15.9	24.1	15.2	15.3	26.0	17.8	17.8
Incr Delay (d2), s/veh	7.0	0.5	0.2	17.3	0.0	2.0	9.3	0.2	0.4	12.6	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.2	0.7	4.0	0.0	3.5	1.9	0.7	0.8	0.7	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	21.4	20.5	38.5	0.0	17.8	33.4	15.4	15.6	38.6	18.1	18.5
LnGrp LOS	C	C	C	D	A	B	C	B	B	D	B	B
Approach Vol, veh/h		192			584			367			318	
Approach Delay, s/veh		22.0			26.3			21.7			21.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	19.8	14.7	13.3	9.4	16.8	5.2	22.8
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	3.7	4.1	10.6	5.6	5.8	4.5	2.5	13.2
Green Ext Time (p_c), s	0.0	2.5	0.0	0.5	0.0	2.9	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	679	27	44	757	73	58	224	62	82	147	443
Future Volume (veh/h)	214	679	27	44	757	73	58	224	62	82	147	443
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	218	693	28	45	772	74	59	229	63	84	150	452
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	245	1280	52	58	859	82	75	1589	410	105	2102	855
Arrive On Green	0.14	0.37	0.37	0.03	0.27	0.27	0.04	0.40	0.40	0.06	0.41	0.41
Sat Flow, veh/h	1767	3450	139	1767	3240	310	1767	3989	1028	1767	5066	1534
Grp Volume(v), veh/h	218	354	367	45	420	426	59	192	100	84	150	452
Grp Sat Flow(s),veh/h/ln	1767	1763	1826	1767	1763	1788	1767	1689	1640	1767	1689	1534
Q Serve(g_s), s	17.0	22.1	22.2	3.5	32.2	32.2	4.6	5.1	5.5	6.6	2.5	26.1
Cycle Q Clear(g_c), s	17.0	22.1	22.2	3.5	32.2	32.2	4.6	5.1	5.5	6.6	2.5	26.1
Prop In Lane	1.00		0.08	1.00		0.17	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	245	654	678	58	467	474	75	1346	653	105	2102	855
V/C Ratio(X)	0.89	0.54	0.54	0.78	0.90	0.90	0.78	0.14	0.15	0.80	0.07	0.53
Avail Cap(c_a), veh/h	386	840	870	121	575	584	134	1346	653	172	2102	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	34.6	34.7	67.2	49.6	49.6	66.4	26.9	27.0	65.1	24.7	19.8
Incr Delay (d2), s/veh	14.4	1.1	1.0	8.1	13.3	13.2	6.5	0.2	0.5	5.3	0.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	9.8	10.1	1.7	15.9	16.1	2.2	2.1	2.3	3.1	1.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.7	35.7	35.7	75.3	62.9	62.9	72.8	27.1	27.5	70.4	24.8	22.1
LnGrp LOS	E	D	D	E	E	E	E	C	C	E	C	C
Approach Vol, veh/h		939			891			351			686	
Approach Delay, s/veh		44.5			63.5			34.9			28.6	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	61.1	9.0	57.3	10.4	63.4	23.8	42.4
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	8.6	7.5	5.5	24.2	6.6	28.1	19.0	34.2
Green Ext Time (p_c), s	0.0	2.2	0.0	8.4	0.0	1.3	0.5	2.9

Intersection Summary	
HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	825	1622	1875	54	42	51
Future Volume (veh/h)	825	1622	1875	54	42	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	887	1744	2016	0	45	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4359	2938		89	79
Arrive On Green	0.24	0.86	0.58	0.00	0.05	0.05
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	887	1744	2016	0	45	55
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	8.6	32.8	0.0	2.9	4.1
Cycle Q Clear(g_c), s	28.7	8.6	32.8	0.0	2.9	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4359	2938		89	79
V/C Ratio(X)	1.06	0.40	0.69		0.50	0.69
Avail Cap(c_a), veh/h	834	4359	2938		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	1.8	17.3	0.0	54.6	55.1
Incr Delay (d2), s/veh	49.5	0.3	1.3	0.0	1.6	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	1.6	12.5	0.0	1.3	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	94.2	2.0	18.6	0.0	56.2	59.1
LnGrp LOS	F	A	B		E	E
Approach Vol, veh/h		2631	2016	A	100	
Approach Delay, s/veh		33.1	18.6		57.8	
Approach LOS		C	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.8		11.2	33.1	73.7
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		10.6		6.1	30.7	34.8
Green Ext Time (p_c), s		55.5		0.1	0.0	9.7

Intersection Summary		
HCM 6th Ctrl Delay		27.5
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	33	83	45	100	68	224	1019	55	124	705	179
Future Volume (veh/h)	67	33	83	45	100	68	224	1019	55	124	705	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	70	34	86	47	104	71	233	1061	57	129	734	186
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	158	210	167	64	192	149	344	1445	78	166	1477	730
Arrive On Green	0.05	0.11	0.11	0.04	0.10	0.10	0.10	0.43	0.43	0.09	0.42	0.42
Sat Flow, veh/h	3428	1856	1476	1767	1856	1441	3428	3398	183	1767	3526	1570
Grp Volume(v), veh/h	70	34	86	47	104	71	233	550	568	129	734	186
Grp Sat Flow(s),veh/h/ln	1714	1856	1476	1767	1856	1441	1714	1763	1818	1767	1763	1570
Q Serve(g_s), s	1.2	1.0	3.2	1.6	3.2	2.8	3.9	15.4	15.4	4.2	9.0	4.3
Cycle Q Clear(g_c), s	1.2	1.0	3.2	1.6	3.2	2.8	3.9	15.4	15.4	4.2	9.0	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	158	210	167	64	192	149	344	750	773	166	1477	730
V/C Ratio(X)	0.44	0.16	0.51	0.73	0.54	0.48	0.68	0.73	0.73	0.78	0.50	0.25
Avail Cap(c_a), veh/h	278	972	773	119	934	725	643	887	915	478	2073	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	23.7	24.7	28.2	25.2	25.0	25.7	14.2	14.2	26.2	12.6	9.6
Incr Delay (d2), s/veh	0.7	0.4	2.4	5.8	0.9	0.9	0.9	3.3	3.2	2.9	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.4	1.1	0.7	1.3	0.9	1.5	5.6	5.7	1.7	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	24.1	27.2	34.1	26.1	25.9	26.6	17.5	17.4	29.1	13.0	9.9
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	A
Approach Vol, veh/h		190			222			1351			1049	
Approach Delay, s/veh		27.0			27.7			19.0			14.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	30.5	6.6	12.2	10.3	30.1	7.1	11.6
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	6.2	17.4	3.6	5.2	5.9	11.0	3.2	5.2
Green Ext Time (p_c), s	0.1	7.7	0.0	0.4	0.2	8.5	0.0	0.4

Intersection Summary			
HCM 6th Ctrl Delay			18.5
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1069	51	258	267	0	0	0	0	177	0	667
Future Volume (veh/h)	0	1069	51	258	267	0	0	0	0	177	0	667
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1162	55	280	290	0				192	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1348	589	1002	2613	0				231	0	
Arrive On Green	0.00	0.38	0.38	0.58	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1162	55	280	290	0				192	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	22.8	1.7	3.0	0.0	0.0				7.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.8	1.7	3.0	0.0	0.0				7.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1348	589	1002	2613	0				231	0	
V/C Ratio(X)	0.00	0.86	0.09	0.28	0.11	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	1608	702	1002	2613	0				372	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.68	0.68	0.82	0.82	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.3	14.8	11.7	0.0	0.0				31.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.2	0.2	0.1	0.1	0.0				4.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.3	0.6	1.0	0.0	0.0				3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.6	15.0	11.8	0.1	0.0				35.7	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1217			570						192	A
Approach Delay, s/veh		26.0			5.8						35.7	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.9	33.7		14.4		60.6
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	11.2	* 34		15.8		49.6
Max Q Clear Time (g_c+I1), s	15.0	24.8		9.9		2.0
Green Ext Time (p_c), s	0.5	3.9		0.0		1.3

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	793	449	0	0	389	252	245	10	347	0	0	0
Future Volume (veh/h)	793	449	0	0	389	252	245	10	347	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	826	468	0	0	405	262	255	10	361			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1135	2299	0	0	501	319	363	14	335			
Arrive On Green	0.55	1.00	0.00	0.00	0.25	0.25	0.21	0.21	0.21			
Sat Flow, veh/h	3428	3618	0	0	2115	1290	1704	67	1572			
Grp Volume(v), veh/h	826	468	0	0	352	315	265	0	361			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1550	1770	0	1572			
Q Serve(g_s), s	13.5	0.0	0.0	0.0	14.1	14.4	10.4	0.0	16.0			
Cycle Q Clear(g_c), s	13.5	0.0	0.0	0.0	14.1	14.4	10.4	0.0	16.0			
Prop In Lane	1.00		0.00	0.00		0.83	0.96		1.00			
Lane Grp Cap(c), veh/h	1135	2299	0	0	436	384	378	0	335			
V/C Ratio(X)	0.73	0.20	0.00	0.00	0.81	0.82	0.70	0.00	1.08			
Avail Cap(c_a), veh/h	1135	2299	0	0	541	475	378	0	335			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.57	0.57	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.2	0.0	0.0	0.0	26.5	26.6	27.3	0.0	29.5			
Incr Delay (d2), s/veh	1.4	0.1	0.0	0.0	14.8	17.6	4.9	0.0	70.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.0	0.0	7.3	6.8	4.7	0.0	19.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	0.1	0.0	0.0	41.3	44.3	32.2	0.0	100.4			
LnGrp LOS	B	A	A	A	D	D	C	A	F			
Approach Vol, veh/h		1294			667			626				
Approach Delay, s/veh		10.0			42.7			71.5				
Approach LOS		B			D			E				

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	54.4		20.6	30.3	24.1
Change Period (Y+Rc), s	5.5		4.6	5.5	* 5.5
Max Green Setting (Gmax), s	48.9		16.0	21.8	* 23
Max Q Clear Time (g_c+I1), s	2.0		18.0	15.5	16.4
Green Ext Time (p_c), s	2.1		0.0	1.9	1.6

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	694	6	1062	965	0	390
Future Volume (veh/h)	694	6	1062	965	0	390
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	752	0	1142	0	0	419
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	899	410	1718		0	1718
Arrive On Green	0.25	0.00	0.49	0.00	0.00	0.49
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	752	0	1142	0	0	419
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	11.1	0.0	13.5	0.0	0.0	3.8
Cycle Q Clear(g_c), s	11.1	0.0	13.5	0.0	0.0	3.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	899	410	1718		0	1718
V/C Ratio(X)	0.84	0.00	0.66		0.00	0.24
Avail Cap(c_a), veh/h	983	448	1718		0	1718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	10.7	0.0	0.0	8.2
Incr Delay (d2), s/veh	6.2	0.0	2.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	4.7	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.6	0.0	12.7	0.0	0.0	8.5
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	752		1142	A		419
Approach Delay, s/veh	25.6		12.7			8.5
Approach LOS	C		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	32.3	32.3	22.7
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	25.5	* 26	15.3
Max Q Clear Time (g_c+I1), s	15.5	5.8	13.1
Green Ext Time (p_c), s	6.6	4.4	0.9

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	247	438	63	80	230	527
Future Volume (vph)	247	438	63	80	230	527
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	274	487	70	89	256	586

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	274	487	159	256	586
Volume Left (vph)	274	0	0	256	0
Volume Right (vph)	0	0	89	0	586
Hadj (s)	0.55	0.05	-0.28	0.25	-0.55
Departure Headway (s)	6.1	5.6	5.4	6.1	3.2
Degree Utilization, x	0.47	0.76	0.24	0.43	0.52
Capacity (veh/h)	580	628	627	554	1117
Control Delay (s)	13.1	22.9	10.2	13.7	9.6
Approach Delay (s)	19.4		10.2	10.9	
Approach LOS	C		B	B	

Intersection Summary			
Delay	14.5		
Level of Service	B		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	672	470	396	194	215	31
Future Volume (veh/h)	672	470	396	194	215	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	723	505	426	0	231	33
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	768	1346	816		338	839
Arrive On Green	0.43	0.73	0.23	0.00	0.10	0.10
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	723	505	426	0	231	33
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	27.8	7.3	7.5	0.0	4.6	0.7
Cycle Q Clear(g_c), s	27.8	7.3	7.5	0.0	4.6	0.7
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	768	1346	816		338	839
V/C Ratio(X)	0.94	0.38	0.52		0.68	0.04
Avail Cap(c_a), veh/h	1015	1972	1514		1062	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	3.7	23.9	0.0	30.9	7.9
Incr Delay (d2), s/veh	12.1	0.1	0.2	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	1.8	3.0	0.0	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.3	3.7	24.1	0.0	31.9	7.9
LnGrp LOS	C	A	C		C	A
Approach Vol, veh/h		1228	426	A	264	
Approach Delay, s/veh		20.0	24.1		28.9	
Approach LOS		B	C		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.5		13.5	35.1	22.4
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		9.3		6.6	29.8	9.5
Green Ext Time (p_c), s		2.3		0.4	1.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Existing PM
3: Taylor St & Morena Blvd/Whitman St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	19	333	0	0	11	497	806	3	5	250	62
Future Volume (veh/h)	270	19	333	0	0	11	497	806	3	5	250	62
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	315	0	370				552	896	3	6	278	69
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	703	0	1031				1607	2280	8	11	456	110
Arrive On Green	0.20	0.00	0.20				0.94	1.00	1.00	0.01	0.16	0.16
Sat Flow, veh/h	3534	0	1477				3428	3604	12	1767	2768	669
Grp Volume(v), veh/h	315	0	370				552	438	461	6	174	173
Grp Sat Flow(s),veh/h/ln	1767	0	1477				1714	1763	1853	1767	1763	1674
Q Serve(g_s), s	7.1	0.0	0.0				1.3	0.0	0.0	0.3	8.3	8.6
Cycle Q Clear(g_c), s	7.1	0.0	0.0				1.3	0.0	0.0	0.3	8.3	8.6
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.40
Lane Grp Cap(c), veh/h	703	0	1031				1607	1115	1172	11	290	276
V/C Ratio(X)	0.45	0.00	0.36				0.34	0.39	0.39	0.55	0.60	0.63
Avail Cap(c_a), veh/h	1178	0	1229				1607	1115	1172	100	460	437
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	6.5				1.5	0.0	0.0	44.6	34.8	35.0
Incr Delay (d2), s/veh	0.7	0.0	0.3				0.0	0.9	0.8	14.9	8.9	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	9.3				0.4	0.3	0.3	0.2	4.2	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	0.0	6.9				1.6	0.9	0.8	59.5	43.7	45.3
LnGrp LOS	C	A	A				A	A	A	E	D	D
Approach Vol, veh/h		685						1451			353	
Approach Delay, s/veh		18.6						1.1			44.8	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.0	61.8		23.2	47.1	19.7
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.3	2.0		9.1	3.3	10.6
Green Ext Time (p_c), s	0.0	7.8		4.7	1.1	2.1

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing PM
4: Taylor St & Juan St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	2	65	1	214	5	1058	82	185	444	9
Future Volume (veh/h)	8	4	2	65	1	214	5	1058	82	185	444	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.99		0.95	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	8	4	2	68	1	223	5	1102	85	193	462	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	94	38	117	21	285	9	1378	106	524	2070	40
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.01	0.29	0.29	0.30	0.59	0.59
Sat Flow, veh/h	543	374	153	269	82	1135	1767	4766	367	1767	3534	69
Grp Volume(v), veh/h	14	0	0	292	0	0	5	780	407	193	230	241
Grp Sat Flow(s),veh/h/ln	1070	0	0	1486	0	0	1767	1689	1756	1767	1763	1840
Q Serve(g_s), s	0.0	0.0	0.0	11.6	0.0	0.0	0.3	19.2	19.3	7.8	5.6	5.6
Cycle Q Clear(g_c), s	0.5	0.0	0.0	16.4	0.0	0.0	0.3	19.2	19.3	7.8	5.6	5.6
Prop In Lane	0.57		0.14	0.23		0.76	1.00		0.21	1.00		0.04
Lane Grp Cap(c), veh/h	332	0	0	423	0	0	9	976	508	524	1033	1078
V/C Ratio(X)	0.04	0.00	0.00	0.69	0.00	0.00	0.54	0.80	0.80	0.37	0.22	0.22
Avail Cap(c_a), veh/h	442	0	0	545	0	0	102	1054	548	524	1033	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.72	0.72	0.72	0.94	0.94	0.94
Uniform Delay (d), s/veh	25.4	0.0	0.0	31.3	0.0	0.0	44.7	29.6	29.6	25.0	8.9	8.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.0	0.0	12.6	5.0	9.3	0.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	5.9	0.0	0.0	0.1	8.2	9.2	3.2	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	0.0	0.0	32.6	0.0	0.0	57.2	34.6	38.9	25.2	9.4	9.3
LnGrp LOS	C	A	A	C	A	A	E	C	D	C	A	A
Approach Vol, veh/h		14			292			1192			664	
Approach Delay, s/veh		25.4			32.6			36.1			13.9	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	31.6	30.9		27.5	4.9	57.6		27.5
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	19.8	21.3		2.5	2.3	7.6		18.4
Green Ext Time (p_c), s	0.2	4.8		0.0	0.0	4.1		1.0

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	941	100	130	434	0	113	0	207	0	0	0
Future Volume (veh/h)	0	941	100	130	434	0	113	0	207	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.90		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	980	104	135	452	0	118	0	216	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1543	163	172	1706	0	384	0	288	0	349	0
Arrive On Green	0.00	0.43	0.43	0.10	0.61	0.00	0.19	0.00	0.19	0.00	0.00	0.00
Sat Flow, veh/h	0	3730	380	1767	2849	0	1270	0	1531	0	1856	0
Grp Volume(v), veh/h	0	723	361	135	452	0	118	0	216	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1320	1767	1388	0	1270	0	1531	0	1856	0
Q Serve(g_s), s	0.0	10.6	10.7	3.7	3.7	0.0	4.1	0.0	6.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.6	10.7	3.7	3.7	0.0	4.1	0.0	6.6	0.0	0.0	0.0
Prop In Lane	0.00		0.29	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1140	566	172	1706	0	384	0	288	0	349	0
V/C Ratio(X)	0.00	0.63	0.64	0.79	0.27	0.00	0.31	0.00	0.75	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1343	667	199	1961	0	914	0	928	0	1158	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.1	11.2	21.9	4.4	0.0	18.0	0.0	19.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	1.5	13.8	0.0	0.0	0.2	0.0	1.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	2.7	2.1	0.7	0.0	1.1	0.0	2.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.9	12.7	35.7	4.4	0.0	18.2	0.0	20.5	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1084			587			334			0	
Approach Delay, s/veh		12.1			11.6			19.7			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	9.2	26.2	14.3	35.4	14.3
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	5.7	12.7	0.0	5.7	8.6
Green Ext Time (p_c), s	0.0	5.7	0.0	2.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	468	117	257	266	50	188	226	502	124	221	111
Future Volume (veh/h)	67	468	117	257	266	50	188	226	502	124	221	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.93	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	71	498	124	273	283	53	200	240	534	132	235	118
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	803	535	315	519	406	211	1046	485	151	1008	405
Arrive On Green	0.05	0.29	0.29	0.12	0.35	0.35	0.12	0.30	0.30	0.11	0.29	0.29
Sat Flow, veh/h	1767	2776	1202	2699	1461	1144	1767	3526	1147	1391	3526	1418
Grp Volume(v), veh/h	71	498	124	273	283	53	200	240	534	132	235	118
Grp Sat Flow(s),veh/h/ln	1767	1388	1202	1350	1461	1144	1767	1763	1147	1391	1763	1418
Q Serve(g_s), s	4.9	19.3	8.4	12.3	19.2	3.9	13.9	6.4	36.8	11.6	6.3	8.0
Cycle Q Clear(g_c), s	4.9	19.3	8.4	12.3	19.2	3.9	13.9	6.4	36.8	11.6	6.3	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	803	535	315	519	406	211	1046	485	151	1008	405
V/C Ratio(X)	0.78	0.62	0.23	0.87	0.55	0.13	0.95	0.23	1.10	0.87	0.23	0.29
Avail Cap(c_a), veh/h	168	817	541	376	519	406	211	1046	485	179	1080	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	38.2	24.2	53.8	32.0	27.1	54.3	32.9	36.8	54.5	33.9	34.5
Incr Delay (d2), s/veh	5.5	1.5	0.3	14.7	0.8	0.1	47.1	0.1	71.4	28.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.7	2.5	4.8	6.9	1.1	9.0	2.8	24.0	5.1	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.7	39.7	24.5	68.5	32.8	27.1	101.4	33.0	108.2	82.6	33.9	34.6
LnGrp LOS	E	D	C	E	C	C	F	C	F	F	C	C
Approach Vol, veh/h		693			609			974			485	
Approach Delay, s/veh		39.4			48.3			88.3			47.4	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	41.8	20.2	42.2	11.8	49.9	18.9	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	14.3	21.3	15.9	10.0	6.9	21.2	13.6	38.8
Green Ext Time (p_c), s	0.2	4.1	0.0	1.1	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	21	58	580	381	128
Future Vol, veh/h	36	21	58	580	381	128
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	23	62	624	410	138

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	935	502	558	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	277	566	1005	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	255	554	995	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	605	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	19		0.8		0	
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	995	-	318	-	-
HCM Lane V/C Ratio	0.063	-	0.193	-	-
HCM Control Delay (s)	8.9	-	19	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	32	94	108	73	1889	0	0	2042	97
Future Volume (veh/h)	0	0	0	32	94	108	73	1889	0	0	2042	97
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.93	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				39	113	130	88	2276	0	0	2460	117
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				85	246	264	106	3842	0	0	3398	1020
Arrive On Green				0.18	0.18	0.18	0.12	1.00	0.00	0.00	0.67	0.67
Sat Flow, veh/h				470	1362	1464	1767	5233	0	0	5233	1521
Grp Volume(v), veh/h				152	0	130	88	2276	0	0	2460	117
Grp Sat Flow(s),veh/h/ln				1832	0	1464	1767	1689	0	0	1689	1521
Q Serve(g_s), s				11.9	0.0	12.8	7.8	0.0	0.0	0.0	49.7	4.4
Cycle Q Clear(g_c), s				11.9	0.0	12.8	7.8	0.0	0.0	0.0	49.7	4.4
Prop In Lane				0.26		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				330	0	264	106	3842	0	0	3398	1020
V/C Ratio(X)				0.46	0.00	0.49	0.83	0.59	0.00	0.00	0.72	0.11
Avail Cap(c_a), veh/h				504	0	403	150	3842	0	0	3398	1020
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.71	0.71	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.6	0.0	59.0	69.6	0.0	0.0	0.0	16.8	9.4
Incr Delay (d2), s/veh				0.4	0.0	0.5	12.1	0.5	0.0	0.0	1.4	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.6	0.0	4.8	3.7	0.2	0.0	0.0	18.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				59.0	0.0	59.5	81.7	0.5	0.0	0.0	18.2	9.6
LnGrp LOS				E	A	E	F	A	A	A	B	A
Approach Vol, veh/h					282			2364			2577	
Approach Delay, s/veh					59.2			3.5			17.8	
Approach LOS					E			A			B	

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		126.2		33.8	14.0	112.2						
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9						
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2						
Max Q Clear Time (g_c+I1), s		2.0		14.8	9.8	51.7						
Green Ext Time (p_c), s		10.4		0.7	0.0	11.6						

Intersection Summary			
HCM 6th Ctrl Delay			13.6
HCM 6th LOS			B

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	190	81	0	0	0	0	1940	12	90	1898	0
Future Volume (veh/h)	356	190	81	0	0	0	0	1940	12	90	1898	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	282	316	84				0	2000	12	93	1957	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	417	438	345				0	3181	19	111	4486	0
Arrive On Green	0.24	0.24	0.24				0.00	1.00	1.00	0.13	1.00	0.00
Sat Flow, veh/h	1767	1856	1464				0	5362	31	1767	6643	0
Grp Volume(v), veh/h	282	316	84				0	1300	712	93	1957	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1464				0	1689	1849	1767	1596	0
Q Serve(g_s), s	23.2	25.1	7.4				0.0	0.0	0.0	8.2	0.0	0.0
Cycle Q Clear(g_c), s	23.2	25.1	7.4				0.0	0.0	0.0	8.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	417	438	345				0	2068	1132	111	4486	0
V/C Ratio(X)	0.68	0.72	0.24				0.00	0.63	0.63	0.84	0.44	0.00
Avail Cap(c_a), veh/h	520	546	431				0	2068	1132	186	4486	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.47	0.47	0.62	0.62	0.00
Uniform Delay (d), s/veh	55.6	56.3	49.5				0.0	0.0	0.0	69.1	0.0	0.0
Incr Delay (d2), s/veh	1.4	2.4	0.1				0.0	0.7	1.3	4.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	12.1	2.8				0.0	0.2	0.4	3.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	58.6	49.7				0.0	0.7	1.3	73.1	0.2	0.0
LnGrp LOS	E	E	D				A	A	A	E	A	A
Approach Vol, veh/h		682						2012			2050	
Approach Delay, s/veh		56.9						0.9			3.5	
Approach LOS		E						A			A	

Timer - Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.5	102.9		42.6		117.4		
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9		
Max Green Setting (Gmax), s	16.8	81.9		47.1		103.1		
Max Q Clear Time (g_c+I1), s	10.2	2.0		27.1		2.0		
Green Ext Time (p_c), s	0.0	6.6		0.7		7.6		

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	240	10	205	0	149	0	596	221	59	463	1
Future Volume (veh/h)	67	240	10	205	0	149	0	596	221	59	463	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.88	1.00		1.00	1.00		0.88	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	71	253	11	216	0	157	0	627	233	62	487	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	3
Cap, veh/h	286	284	12	0	0	0	0	1752	650	486	2804	6
Arrive On Green	0.16	0.16	0.16	0.00	0.00	0.00	0.00	0.73	0.73	0.02	0.78	0.78
Sat Flow, veh/h	1767	1754	76		0		0	2506	895	1767	3610	7
Grp Volume(v), veh/h	71	0	264		0.0		0	458	402	62	238	250
Grp Sat Flow(s),veh/h/ln	1767	0	1830				0	1763	1546	1767	1763	1854
Q Serve(g_s), s	5.6	0.0	22.6				0.0	15.4	15.4	1.4	5.6	5.6
Cycle Q Clear(g_c), s	5.6	0.0	22.6				0.0	15.4	15.4	1.4	5.6	5.6
Prop In Lane	1.00		0.04				0.00		0.58	1.00		0.00
Lane Grp Cap(c), veh/h	286	0	296				0	1279	1122	486	1369	1440
V/C Ratio(X)	0.25	0.00	0.89				0.00	0.36	0.36	0.13	0.17	0.17
Avail Cap(c_a), veh/h	399	0	413				0	1279	1122	523	1369	1440
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.00	0.54				0.00	0.34	0.34	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	0.0	65.7				0.0	8.1	8.1	5.8	4.6	4.6
Incr Delay (d2), s/veh	0.2	0.0	9.7				0.0	0.3	0.3	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	11.4				0.0	5.8	5.1	0.5	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	75.3				0.0	8.4	8.4	5.8	4.9	4.9
LnGrp LOS	E	A	E				A	A	A	A	A	A
Approach Vol, veh/h		335						860			550	
Approach Delay, s/veh		71.8						8.4			5.0	
Approach LOS		E						A			A	

Timer - Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	8.1	121.0		30.8		129.2		
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9		
Max Green Setting (Gmax), s	7.1	65.6		36.1		77.1		
Max Q Clear Time (g_c+I1), s	3.4	17.4		24.6		7.6		
Green Ext Time (p_c), s	0.0	23.1		1.3		11.1		

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	452	392	187	255	321	22	226	1511	404	0	1453	614
Future Volume (veh/h)	452	392	187	255	321	22	226	1511	404	0	1453	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	511	398	203	217	433	24	246	1642	439	0	1579	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	799	419	336	249	489	27	283	2072	544	0	2058	
Arrive On Green	0.23	0.23	0.23	0.05	0.05	0.05	0.17	1.00	1.00	0.00	0.41	0.00
Sat Flow, veh/h	3534	1856	1486	1767	3478	192	3428	3964	1040	0	5233	1572
Grp Volume(v), veh/h	511	398	203	217	230	227	246	1394	687	0	1579	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1486	1767	1856	1815	1714	1689	1627	0	1689	1572
Q Serve(g_s), s	20.9	33.8	19.6	19.5	19.7	19.9	11.2	0.0	0.0	0.0	43.0	0.0
Cycle Q Clear(g_c), s	20.9	33.8	19.6	19.5	19.7	19.9	11.2	0.0	0.0	0.0	43.0	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.64	0.00		1.00
Lane Grp Cap(c), veh/h	799	419	336	249	261	255	283	1765	851	0	2058	
V/C Ratio(X)	0.64	0.95	0.60	0.87	0.88	0.89	0.87	0.79	0.81	0.00	0.77	
Avail Cap(c_a), veh/h	820	430	345	299	314	307	315	1765	851	0	2058	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.70	0.70	0.70	0.00	0.91	0.00
Uniform Delay (d), s/veh	56.0	61.0	55.5	74.9	75.0	75.0	65.9	0.0	0.0	0.0	41.0	0.0
Incr Delay (d2), s/veh	1.2	29.9	2.0	17.4	18.1	19.3	14.1	2.6	5.8	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	19.4	7.6	10.6	11.3	11.2	5.1	0.6	1.4	0.0	18.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	90.9	57.5	92.2	93.1	94.3	80.1	2.6	5.8	0.0	43.5	0.0
LnGrp LOS	E	F	E	F	F	F	F	A	A	A	D	
Approach Vol, veh/h		1112			674			2327			1579	A
Approach Delay, s/veh		69.3			93.2			11.7			43.5	
Approach LOS		E			F			B			D	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	89.5	42.1	18.6	70.9	28.4
Change Period (Y+Rc), s	5.9	5.9	5.4	5.9	5.9
Max Green Setting (Gmax), s	78.1	37.1	14.7	58.0	27.1
Max Q Clear Time (g_c+I1), s	2.0	35.8	13.2	45.0	21.9
Green Ext Time (p_c), s	7.6	0.3	0.0	4.3	0.6

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	347	133	115	486	227	183	1482	65	293	1070	108
Future Volume (veh/h)	247	347	133	115	486	227	183	1482	65	293	1070	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	263	369	141	122	517	241	195	1577	69	312	1138	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	305	478	202	218	612	257	237	1708	75	924	2553	258
Arrive On Green	0.09	0.14	0.14	0.12	0.17	0.17	0.07	0.34	0.34	0.54	1.00	1.00
Sat Flow, veh/h	3428	3526	1492	1767	3526	1481	3428	4969	217	3428	4665	471
Grp Volume(v), veh/h	263	369	141	122	517	241	195	1072	574	312	824	429
Grp Sat Flow(s),veh/h/ln	1714	1763	1492	1767	1763	1481	1714	1689	1809	1714	1689	1759
Q Serve(g_s), s	12.1	16.2	12.3	10.4	22.7	15.3	9.0	48.8	48.8	8.2	0.0	0.0
Cycle Q Clear(g_c), s	12.1	16.2	12.3	10.4	22.7	15.3	9.0	48.8	48.8	8.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.27
Lane Grp Cap(c), veh/h	305	478	202	218	612	257	237	1161	622	924	1848	963
V/C Ratio(X)	0.86	0.77	0.70	0.56	0.85	0.94	0.82	0.92	0.92	0.34	0.45	0.45
Avail Cap(c_a), veh/h	420	729	309	219	734	308	334	1391	745	924	1848	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	0.58	0.58	0.58
Uniform Delay (d), s/veh	71.9	66.7	48.0	66.0	64.0	23.0	73.5	50.5	50.5	28.8	0.0	0.0
Incr Delay (d2), s/veh	10.0	1.1	1.6	1.9	6.7	30.3	5.5	10.2	16.7	0.0	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.4	4.7	4.8	10.8	7.6	4.1	22.1	24.8	3.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.9	67.9	49.6	67.9	70.7	53.3	79.0	60.7	67.2	28.9	0.5	0.9
LnGrp LOS	F	E	D	E	E	D	E	E	E	C	A	A
Approach Vol, veh/h		773			880			1841			1565	
Approach Delay, s/veh		69.3			65.6			64.7			6.2	
Approach LOS		E			E			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	48.8	59.9	24.7	26.6	15.4	93.3	18.6	32.7
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	10.2	50.8	12.4	18.2	11.0	2.0	14.1	24.7
Green Ext Time (p_c), s	0.2	4.2	0.0	0.9	0.1	3.3	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	268	14	448	349	115	23	1424	608	152	1128	319
Future Volume (veh/h)	216	268	14	448	349	115	23	1424	608	152	1128	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	225	279	15	467	364	120	24	1483	633	158	1175	332
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	245	354	19	509	389	318	36	2374	720	201	1786	767
Arrive On Green	0.14	0.20	0.20	0.15	0.21	0.21	0.02	0.47	0.47	0.02	0.17	0.17
Sat Flow, veh/h	1767	1741	94	3428	1856	1515	1767	5066	1536	3428	3526	1514
Grp Volume(v), veh/h	225	0	294	467	364	120	24	1483	633	158	1175	332
Grp Sat Flow(s),veh/h/ln	1767	0	1834	1714	1856	1515	1767	1689	1536	1714	1763	1514
Q Serve(g_s), s	20.1	0.0	24.3	21.5	30.9	9.3	2.2	35.2	59.6	7.3	49.9	18.4
Cycle Q Clear(g_c), s	20.1	0.0	24.3	21.5	30.9	9.3	2.2	35.2	59.6	7.3	49.9	18.4
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	0	373	509	389	318	36	2374	720	201	1786	767
V/C Ratio(X)	0.92	0.00	0.79	0.92	0.93	0.38	0.66	0.62	0.88	0.79	0.66	0.43
Avail Cap(c_a), veh/h	316	0	446	660	477	389	62	2374	720	249	1786	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	68.0	0.0	60.5	67.2	62.1	39.4	77.8	31.9	38.4	77.5	53.6	15.7
Incr Delay (d2), s/veh	23.7	0.0	6.3	10.5	17.4	0.2	7.4	1.3	14.4	8.8	1.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	12.0	10.2	16.5	3.5	1.1	14.6	25.2	3.6	24.2	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.8	0.0	66.8	77.6	79.5	39.6	85.3	33.2	52.8	86.2	55.3	17.3
LnGrp LOS	F	A	E	E	E	D	F	C	D	F	E	B
Approach Vol, veh/h		519			951			2140			1665	
Approach Delay, s/veh		77.6			73.6			39.6			50.7	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	80.7	28.2	37.4	7.7	86.8	27.1	38.5
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	19.3	61.6	23.5	26.3	4.2	51.9	22.1	32.9
Green Ext Time (p_c), s	0.0	0.0	0.3	0.5	0.0	3.2	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	52.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	836	164	381	773	120	381
Future Volume (veh/h)	836	164	381	773	120	381
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	919	180	419	849	132	419
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	973	190	433	2169	110	348
Arrive On Green	0.33	0.33	0.25	0.62	0.29	0.29
Sat Flow, veh/h	3006	570	1767	3618	377	1196
Grp Volume(v), veh/h	556	543	419	849	552	0
Grp Sat Flow(s),veh/h/ln	1763	1721	1767	1763	1575	0
Q Serve(g_s), s	33.8	33.9	25.9	13.4	32.1	0.0
Cycle Q Clear(g_c), s	33.8	33.9	25.9	13.4	32.1	0.0
Prop In Lane		0.33	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	589	575	433	2169	459	0
V/C Ratio(X)	0.94	0.95	0.97	0.39	1.20	0.00
Avail Cap(c_a), veh/h	593	579	433	2169	459	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.7	35.7	41.2	10.7	39.0	0.0
Incr Delay (d2), s/veh	24.1	24.7	34.6	0.1	110.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	17.8	15.3	5.0	26.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	59.8	60.4	75.8	10.9	149.5	0.0
LnGrp LOS	E	E	E	B	F	A
Approach Vol, veh/h	1099			1268	552	
Approach Delay, s/veh	60.1			32.3	149.5	
Approach LOS	E			C	F	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	31.0	42.2	73.2	37.0
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	27.0	* 37	67.6	32.1
Max Q Clear Time (g_c+I1), s	27.9	35.9	15.4	34.1
Green Ext Time (p_c), s	0.0	0.9	7.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	204	652	7	0	725
Future Vol, veh/h	0	204	652	7	0	725
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	210	672	7	0	747

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	360	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	634	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	622	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	622	-
HCM Lane V/C Ratio	-	-	0.338	-
HCM Control Delay (s)	-	-	13.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	1.5	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1086	1125	659	668	57
Future Volume (veh/h)	0	1086	1125	659	668	57
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1120	1160	679	689	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1724	1724	1164	925	
Arrive On Green	0.00	0.49	0.49	0.49	0.27	0.00
Sat Flow, veh/h	0	3711	3618	1513	3428	1572
Grp Volume(v), veh/h	0	1120	1160	679	689	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1513	1714	1572
Q Serve(g_s), s	0.0	10.5	11.0	8.6	8.1	0.0
Cycle Q Clear(g_c), s	0.0	10.5	11.0	8.6	8.1	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1724	1724	1164	925	
V/C Ratio(X)	0.00	0.65	0.67	0.58	0.75	
Avail Cap(c_a), veh/h	0	2038	2038	1299	1873	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	8.4	8.5	2.3	14.7	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.7	0.5	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.1	4.3	2.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.0	9.2	2.9	15.6	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		1120	1839		689	A
Approach Delay, s/veh		9.0	6.9		15.6	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.9		17.1		26.9
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		12.5		10.1		13.0
Green Ext Time (p_c), s		6.3		1.8		8.5

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	71	80	1	55	21	631	28	49	462	0
Future Volume (veh/h)	50	0	71	80	1	55	21	631	28	49	462	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	57	0	81	91	1	62	24	717	32	56	525	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	227	38	177	497	5	304	42	1700	76	84	1857	0
Arrive On Green	0.20	0.00	0.20	0.20	0.20	0.20	0.02	0.34	0.34	0.05	0.37	0.00
Sat Flow, veh/h	427	185	870	1293	24	1494	1767	4960	220	1767	5233	0
Grp Volume(v), veh/h	138	0	0	91	0	63	24	487	262	56	525	0
Grp Sat Flow(s),veh/h/ln	1482	0	0	1293	0	1519	1767	1689	1804	1767	1689	0
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	1.2	0.5	4.0	4.0	1.1	2.6	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	1.6	0.0	1.2	0.5	4.0	4.0	1.1	2.6	0.0
Prop In Lane	0.41		0.59	1.00		0.98	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	442	0	0	497	0	309	42	1157	618	84	1857	0
V/C Ratio(X)	0.31	0.00	0.00	0.18	0.00	0.20	0.57	0.42	0.42	0.67	0.28	0.00
Avail Cap(c_a), veh/h	1416	0	0	1381	0	1347	264	2016	1077	327	3192	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	0.0	12.1	0.0	12.0	17.5	9.1	9.1	16.9	8.1	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.1	4.5	0.3	0.6	3.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.5	0.0	0.3	0.2	1.1	1.2	0.5	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	0.0	12.2	0.0	12.1	22.0	9.5	9.8	20.3	8.2	0.0
LnGrp LOS	B	A	A	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		138			154			773			581	
Approach Delay, s/veh		12.7			12.1			9.9			9.4	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	17.8		12.3	5.3	18.7		12.3
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.1	6.0		4.8	2.5	4.6		3.6
Green Ext Time (p_c), s	0.0	5.5		0.5	0.0	3.8		0.4

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	15.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	476	240	476	600	11
Future Vol, veh/h	0	476	240	476	600	11
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	501	253	501	632	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	342	654	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	556	570	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	545	565	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.8	5.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	565	-	545	-	-
HCM Lane V/C Ratio	0.447	-	0.919	-	-
HCM Control Delay (s)	16.4	-	48.8	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	2.3	-	11.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	107	0	704	1101	12
Future Vol, veh/h	0	107	0	704	1101	12
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	110	0	726	1135	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	595	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	445	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	436	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	436	-	-
HCM Lane V/C Ratio	-	0.253	-	-
HCM Control Delay (s)	-	16	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	13	90	146	54	103	175	492	14	16	1117	75
Future Volume (veh/h)	109	13	90	146	54	103	175	492	14	16	1117	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	121	14	100	162	60	114	194	547	16	18	1241	83
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	462	391	186	516	354	205	1637	702	25	1237	83
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.01	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3343	223
Grp Volume(v), veh/h	121	14	100	162	60	114	194	547	16	18	653	671
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1804
Q Serve(g_s), s	9.5	0.8	7.1	12.6	3.4	10.0	15.3	13.8	0.8	1.4	51.8	51.8
Cycle Q Clear(g_c), s	9.5	0.8	7.1	12.6	3.4	10.0	15.3	13.8	0.8	1.4	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	134	462	391	186	516	354	205	1637	702	25	652	668
V/C Ratio(X)	0.90	0.03	0.26	0.87	0.12	0.32	0.95	0.33	0.02	0.71	1.00	1.00
Avail Cap(c_a), veh/h	134	462	391	277	530	363	205	1637	702	72	652	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	39.8	42.2	61.7	37.7	40.0	61.5	23.8	20.3	68.7	44.1	44.1
Incr Delay (d2), s/veh	48.9	0.0	0.1	12.7	0.0	0.2	48.6	0.1	0.0	12.6	35.5	36.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.4	2.8	6.3	1.6	3.2	9.6	5.8	0.3	0.7	28.8	29.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.1	39.8	42.3	74.4	37.7	40.2	110.0	23.9	20.3	81.3	79.6	80.1
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	F	F
Approach Vol, veh/h		235			336			757			1342	
Approach Delay, s/veh		78.6			56.3			45.9			79.9	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	73.7	19.1	39.7	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	3.4	15.8	14.6	9.1	17.3	53.8	11.5	12.0
Green Ext Time (p_c), s	0.0	5.4	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	67.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1070.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1819	1539	681	1222	131
Future Vol, veh/h	0	1819	1539	681	1222	131
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2021	1710	757	1358	146

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	699	1514	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 380	~ 433	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 373	~ 429	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 2014.8	$ 948.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 429	-	373	-	-
HCM Lane V/C Ratio	3.986	-	5.419	-	-
HCM Control Delay (s)	$ 1368.2	-	$ 2014.8	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	164	-	209.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	65	181	110	149	4	265	29	130	5	63	23
Future Volume (veh/h)	6	65	181	110	149	4	265	29	130	5	63	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.93	0.98		0.95	0.98		0.96	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	68	191	116	157	4	279	31	137	5	66	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	516	134	377	409	595	15	487	63	172	113	512	176
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1197	405	1138	1085	1799	46	814	156	429	23	1274	438
Grp Volume(v), veh/h	6	0	259	116	0	161	447	0	0	95	0	0
Grp Sat Flow(s),veh/h/ln	1197	0	1544	1085	0	1844	1399	0	0	1735	0	0
Q Serve(g_s), s	0.1	0.0	4.9	3.5	0.0	2.3	8.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	4.9	8.5	0.0	2.3	10.1	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.74	1.00		0.02	0.62		0.31	0.05		0.25
Lane Grp Cap(c), veh/h	516	0	511	409	0	610	722	0	0	801	0	0
V/C Ratio(X)	0.01	0.00	0.51	0.28	0.00	0.26	0.62	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	809	0	889	675	0	1062	1258	0	0	1469	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	9.9	13.3	0.0	9.0	9.5	0.0	0.0	6.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.4	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.4	0.7	0.0	0.7	2.1	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	0.0	11.1	13.7	0.0	9.2	9.8	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	A	A	B	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		265			277			447			95	
Approach Delay, s/veh		11.1			11.1			9.8			7.0	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.0		19.6		17.0		19.6				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		21.1		29.1		21.1		29.1				
Max Q Clear Time (g_c+I1), s		6.9		3.3		10.5		12.1				
Green Ext Time (p_c), s		2.1		0.3		1.1		1.9				
Intersection Summary												
HCM 6th Ctrl Delay			10.2									
HCM 6th LOS			B									

Existing PM | Old Town Complex
23: Old Town Ave & Moore St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	12	43	95	173	320	314	29	0	295	133
Future Volume (veh/h)	2	3	12	43	95	173	320	314	29	0	295	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2	3	13	47	103	188	348	341	32	0	321	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	80	94	291	99	137	216	409	1005	94	0	365	165
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.60	0.60	0.00	0.30	0.30
Sat Flow, veh/h	73	384	1189	145	560	883	1767	1665	156	0	1200	542
Grp Volume(v), veh/h	18	0	0	338	0	0	348	0	373	0	0	466
Grp Sat Flow(s),veh/h/ln	1646	0	0	1587	0	0	1767	0	1821	0	0	1742
Q Serve(g_s), s	0.0	0.0	0.0	7.9	0.0	0.0	12.2	0.0	6.6	0.0	0.0	16.4
Cycle Q Clear(g_c), s	0.6	0.0	0.0	13.2	0.0	0.0	12.2	0.0	6.6	0.0	0.0	16.4
Prop In Lane	0.11		0.72	0.14		0.56	1.00		0.09	0.00		0.31
Lane Grp Cap(c), veh/h	465	0	0	452	0	0	409	0	1099	0	0	530
V/C Ratio(X)	0.04	0.00	0.00	0.75	0.00	0.00	0.85	0.00	0.34	0.00	0.00	0.88
Avail Cap(c_a), veh/h	545	0	0	536	0	0	568	0	1433	0	0	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	0.0	23.4	0.0	0.0	23.8	0.0	6.4	0.0	0.0	21.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.7	0.0	0.0	6.6	0.0	0.1	0.0	0.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	5.0	0.0	0.0	5.5	0.0	2.0	0.0	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	0.0	27.0	0.0	0.0	30.3	0.0	6.5	0.0	0.0	29.9
LnGrp LOS	B	A	A	C	A	A	C	A	A	A	A	C
Approach Vol, veh/h		18			338			721			466	
Approach Delay, s/veh		18.7			27.0			18.0			29.9	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	43.9		20.7	19.4	24.6		20.7
Change Period (Y+Rc), s	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	50.9		19.3	20.8	25.7		19.3
Max Q Clear Time (g_c+I1), s	8.6		2.6	14.2	18.4		15.2
Green Ext Time (p_c), s	1.6		0.0	0.1	1.2		0.6

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Existing PM | Old Town Complex
24: Hancock St/Old Town Ave & I-5 SB Off-Ramp | 08/13/2020

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	338	245	0	314	112	0
Future Vol, veh/h	338	245	0	314	112	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	376	272	0	349	124	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	17.3	15.7	10.8
HCM LOS	C	C	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	314	338	245	112
LT Vol	0	338	0	0
Through Vol	314	0	0	112
RT Vol	0	0	245	0
Lane Flow Rate	349	376	272	124
Geometry Grp	2	7	7	2
Degree of Util (X)	0.556	0.673	0.396	0.212
Departure Headway (Hd)	5.736	6.456	5.242	6.139
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	628	560	686	585
Service Time	3.768	4.184	2.97	4.18
HCM Lane V/C Ratio	0.556	0.671	0.397	0.212
HCM Control Delay	15.7	21.5	11.4	10.8
HCM Lane LOS	C	C	B	B
HCM 95th-tile Q	3.4	5.1	1.9	0.8

25: Witherby St & Hancock St

Intersection	
Intersection Delay, s/veh	17.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	194	212	30	54	19	367	3	119	10	4	4
Future Vol, veh/h	7	194	212	30	54	19	367	3	119	10	4	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	7	204	223	32	57	20	386	3	125	11	4	4
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	12	10.7	24.3	9.6
HCM LOS	B	B	C	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	75%	3%	0%	29%	56%
Vol Thru, %	1%	97%	0%	52%	22%
Vol Right, %	24%	0%	100%	18%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	489	201	212	103	18
LT Vol	367	7	0	30	10
Through Vol	3	194	0	54	4
RT Vol	119	0	212	19	4
Lane Flow Rate	515	212	223	108	19
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.771	0.371	0.346	0.187	0.033
Departure Headway (Hd)	5.393	6.305	5.576	6.224	6.288
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	669	571	645	575	567
Service Time	3.428	4.048	3.319	4.281	4.355
HCM Lane V/C Ratio	0.77	0.371	0.346	0.188	0.034
HCM Control Delay	24.3	12.7	11.3	10.7	9.6
HCM Lane LOS	C	B	B	B	A
HCM 95th-tile Q	7.3	1.7	1.5	0.7	0.1

26: Witherby St & Pacific Hwy

Intersection	
Intersection Delay, s/veh	23.2
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	41	113	437	100	146
Future Vol, veh/h	52	41	113	437	100	146
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	63	50	138	533	122	178
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.3	30.9	10.8
HCM LOS	B	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	21%	100%	0%	0%
Vol Thru, %	79%	0%	0%	41%
Vol Right, %	0%	0%	100%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	550	52	41	246
LT Vol	113	52	0	0
Through Vol	437	0	0	100
RT Vol	0	0	41	146
Lane Flow Rate	671	63	50	300
Geometry Grp	2	7	7	2
Degree of Util (X)	0.872	0.129	0.085	0.392
Departure Headway (Hd)	4.678	7.309	6.085	4.702
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	493	593	756
Service Time	2.751	5.009	3.785	2.793
HCM Lane V/C Ratio	0.877	0.128	0.084	0.397
HCM Control Delay	30.9	11.1	9.3	10.8
HCM Lane LOS	D	B	A	B
HCM 95th-tile Q	10.8	0.4	0.3	1.9

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	5	0	229	0	321	128	35	106	0
Future Vol, veh/h	0	0	0	5	0	229	0	321	128	35	106	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	6	0	273	0	382	152	42	126	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	11.1	13.7	10.4
HCM LOS	-	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	2%	25%
Vol Thru, %	100%	0%	100%	0%	75%
Vol Right, %	0%	100%	0%	98%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	321	128	0	234	141
LT Vol	0	0	0	5	35
Through Vol	321	0	0	0	106
RT Vol	0	128	0	229	0
Lane Flow Rate	382	152	0	279	168
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.586	0.204	0	0.382	0.257
Departure Headway (Hd)	5.519	4.812	6.146	5.041	5.515
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	657	750	0	719	655
Service Time	3.219	2.512	4.178	3.041	3.526
HCM Lane V/C Ratio	0.581	0.203	0	0.388	0.256
HCM Control Delay	15.7	8.7	9.2	11.1	10.4
HCM Lane LOS	C	A	N	B	B
HCM 95th-tile Q	3.8	0.8	0	1.8	1

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	138	43	0	0	0	43	33	99	192	41	39
Future Vol, veh/h	84	138	43	0	0	0	43	33	99	192	41	39
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	92	152	47	0	0	0	47	36	109	211	45	43
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.7	9.6	11.6
HCM LOS	B	A	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	25%	32%	71%
Vol Thru, %	19%	52%	15%
Vol Right, %	57%	16%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	175	265	272
LT Vol	43	84	192
Through Vol	33	138	41
RT Vol	99	43	39
Lane Flow Rate	192	291	299
Geometry Grp	1	1	1
Degree of Util (X)	0.256	0.41	0.415
Departure Headway (Hd)	4.8	5.073	4.998
Convergence, Y/N	Yes	Yes	Yes
Cap	740	702	714
Service Time	2.884	3.155	3.074
HCM Lane V/C Ratio	0.259	0.415	0.419
HCM Control Delay	9.6	11.7	11.6
HCM Lane LOS	A	B	B
HCM 95th-tile Q	1	2	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	127	181	29	335	1360	0	0	452	528
Future Volume (veh/h)	0	0	0	127	181	29	335	1360	0	0	452	528
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.93	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				134	191	31	353	1432	0	0	476	556
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				271	452	72	426	2584	0	0	1966	855
Arrive On Green				0.15	0.15	0.15	0.25	1.00	0.00	0.00	0.56	0.56
Sat Flow, veh/h				1767	2951	468	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				134	107	115	353	1432	0	0	476	556
Grp Sat Flow(s),veh/h/ln				1767	1689	1731	1714	1763	0	0	1763	1533
Q Serve(g_s), s				6.0	4.9	5.2	8.4	0.0	0.0	0.0	5.9	21.6
Cycle Q Clear(g_c), s				6.0	4.9	5.2	8.4	0.0	0.0	0.0	5.9	21.6
Prop In Lane				1.00		0.27	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				271	259	265	426	2584	0	0	1966	855
V/C Ratio(X)				0.50	0.42	0.43	0.83	0.55	0.00	0.00	0.24	0.65
Avail Cap(c_a), veh/h				536	512	525	502	2584	0	0	1966	855
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.53	0.53	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.4	32.9	33.0	31.5	0.0	0.0	0.0	9.7	13.2
Incr Delay (d2), s/veh				0.5	0.4	0.4	5.4	0.5	0.0	0.0	0.3	3.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	2.0	2.2	3.3	0.2	0.0	0.0	2.2	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.9	33.3	33.4	36.9	0.5	0.0	0.0	10.0	17.0
LnGrp LOS				C	C	C	D	A	A	A	B	B
Approach Vol, veh/h					356			1785			1032	
Approach Delay, s/veh					33.6			7.7			13.8	
Approach LOS					C			A			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.9			15.1	52.8		18.1				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1				
Max Q Clear Time (g_c+I1), s		2.0			10.4	23.6		8.0				
Green Ext Time (p_c), s		20.1			0.3	3.7		1.3				

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	935	287	147	0	0	0	0	760	90	235	344	0
Future Volume (veh/h)	935	287	147	0	0	0	0	760	90	235	344	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	964	296	152				0	784	93	242	355	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1108	582	368				0	1211	520	317	1616	0
Arrive On Green	0.31	0.31	0.31				0.00	0.43	0.43	0.09	0.57	0.00
Sat Flow, veh/h	3534	1856	1175				0	2897	1212	3428	2897	0
Grp Volume(v), veh/h	964	296	152				0	784	93	242	355	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1175				0	1411	1212	1714	1411	0
Q Serve(g_s), s	22.1	11.2	8.8				0.0	18.9	4.1	5.9	5.3	0.0
Cycle Q Clear(g_c), s	22.1	11.2	8.8				0.0	18.9	4.1	5.9	5.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1108	582	368				0	1211	520	317	1616	0
V/C Ratio(X)	0.87	0.51	0.41				0.00	0.65	0.18	0.76	0.22	0.00
Avail Cap(c_a), veh/h	1360	714	452				0	1211	520	343	1616	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.89	0.89	0.98	0.98	0.00
Uniform Delay (d), s/veh	27.9	24.1	23.3				0.0	19.4	15.2	38.1	9.0	0.0
Incr Delay (d2), s/veh	4.7	0.3	0.3				0.0	2.4	0.7	7.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	4.8	2.4				0.0	6.2	1.2	2.8	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	24.4	23.6				0.0	21.8	15.9	45.9	9.3	0.0
LnGrp LOS	C	C	C				A	C	B	D	A	A
Approach Vol, veh/h		1412						877			597	
Approach Delay, s/veh		29.9						21.2			24.1	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.3	41.8		31.9		54.1						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1						
Max Q Clear Time (g_c+I1), s	7.9	20.9		24.1		7.3						
Green Ext Time (p_c), s	0.0	4.3		2.8		2.8						

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Existing PM
31: Washington St & Pacific Hwy (N)

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	0	48	16	14	60	99	753	0	0	417	74
Future Volume (veh/h)	37	0	48	16	14	60	99	753	0	0	417	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.92	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	39	0	51	17	15	63	104	793	0	0	439	78
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	48	0	62	234	245	191	134	1377	0	0	894	382
Arrive On Green	0.07	0.00	0.07	0.13	0.13	0.13	0.08	0.49	0.00	0.00	0.32	0.32
Sat Flow, veh/h	709	0	928	1767	1856	1444	1767	2897	0	0	2897	1206
Grp Volume(v), veh/h	90	0	0	17	15	63	104	793	0	0	439	78
Grp Sat Flow(s),veh/h/ln	1637	0	0	1767	1856	1444	1767	1411	0	0	1411	1206
Q Serve(g_s), s	2.6	0.0	0.0	0.4	0.3	1.9	2.7	9.5	0.0	0.0	6.0	2.2
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.4	0.3	1.9	2.7	9.5	0.0	0.0	6.0	2.2
Prop In Lane	0.43		0.57	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	110	0	0	234	245	191	134	1377	0	0	894	382
V/C Ratio(X)	0.82	0.00	0.00	0.07	0.06	0.33	0.77	0.58	0.00	0.00	0.49	0.20
Avail Cap(c_a), veh/h	138	0	0	972	1020	794	318	2721	0	0	1922	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	18.0	18.0	18.6	21.5	8.6	0.0	0.0	13.1	11.8
Incr Delay (d2), s/veh	21.2	0.0	0.0	0.0	0.0	0.4	10.9	0.1	0.0	0.0	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.1	0.1	0.6	1.4	2.2	0.0	0.0	1.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	0.0	18.0	18.0	19.0	32.3	8.8	0.0	0.0	13.6	12.1
LnGrp LOS	D	A	A	B	B	B	C	A	A	A	B	B
Approach Vol, veh/h		90			95			897			517	
Approach Delay, s/veh		43.0			18.7			11.5			13.4	
Approach LOS		D			B			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		27.5		7.2	8.1	19.4		12.7				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0				
Max Q Clear Time (g_c+I1), s		11.5		4.6	4.7	8.0		3.9				
Green Ext Time (p_c), s		4.1		0.0	0.1	3.9		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			14.3
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing PM
32: Washington St & Pacific Hwy (S)

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	61	73	0	0	0	0	314	32	115	118	0
Future Volume (veh/h)	538	61	73	0	0	0	0	314	32	115	118	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	606	0	76				0	327	33	120	123	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1052	0	740				0	582	58	224	428	0
Arrive On Green	0.30	0.00	0.30				0.00	0.18	0.18	0.13	0.13	0.00
Sat Flow, veh/h	3534	0	1527				0	3303	321	1767	3544	0
Grp Volume(v), veh/h	606	0	76				0	178	182	120	123	0
Grp Sat Flow(s),veh/h/ln	1767	0	1527				0	1763	1768	1767	1689	0
Q Serve(g_s), s	5.3	0.0	1.0				0.0	3.4	3.5	2.3	1.2	0.0
Cycle Q Clear(g_c), s	5.3	0.0	1.0				0.0	3.4	3.5	2.3	1.2	0.0
Prop In Lane	1.00		1.00				0.00		0.18	1.00		0.00
Lane Grp Cap(c), veh/h	1052	0	740				0	320	321	224	428	0
V/C Ratio(X)	0.58	0.00	0.10				0.00	0.56	0.57	0.54	0.29	0.00
Avail Cap(c_a), veh/h	2862	0	1521				0	671	673	322	615	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	5.3				0.0	13.7	13.7	15.1	14.6	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0				0.0	0.6	0.6	2.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.3				0.0	1.1	1.2	0.9	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	0.0	5.3				0.0	14.3	14.3	17.3	15.0	0.0
LnGrp LOS	B	A	A				A	B	B	B	B	A
Approach Vol, veh/h		682						360			243	
Approach Delay, s/veh		10.5						14.3			16.1	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				10.7		17.2		9.0				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.8		6.7				
Max Q Clear Time (g_c+I1), s				5.5		7.3		4.3				
Green Ext Time (p_c), s				0.9		1.3		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			12.6
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Existing PM | Old Town Complex
33: Pacific Hwy & Sassafras St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	142	98	371	208	52	120	277	51	117	623	31
Future Volume (veh/h)	31	142	98	371	208	52	120	277	51	117	623	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	32	145	100	379	212	53	122	283	52	119	636	32
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	46	235	229	393	466	117	152	1004	176	144	1213	61
Arrive On Green	0.03	0.15	0.15	0.27	0.40	0.40	0.09	0.23	0.23	0.10	0.25	0.25
Sat Flow, veh/h	1767	1537	1501	1464	1180	295	1767	4293	751	1464	4932	247
Grp Volume(v), veh/h	32	145	100	379	0	265	122	220	115	119	434	234
Grp Sat Flow(s),veh/h/ln	1767	1537	1501	1464	0	1475	1767	1689	1667	1464	1689	1801
Q Serve(g_s), s	1.4	6.8	4.6	19.6	0.0	10.2	5.2	4.1	4.4	6.1	8.6	8.6
Cycle Q Clear(g_c), s	1.4	6.8	4.6	19.6	0.0	10.2	5.2	4.1	4.4	6.1	8.6	8.6
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.45	1.00		0.14
Lane Grp Cap(c), veh/h	46	235	229	393	0	583	152	789	390	144	831	443
V/C Ratio(X)	0.70	0.62	0.44	0.97	0.00	0.45	0.80	0.28	0.30	0.83	0.52	0.53
Avail Cap(c_a), veh/h	145	640	625	393	0	889	152	1116	551	248	1398	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	30.5	29.6	27.8	0.0	17.1	34.5	24.1	24.2	34.0	25.1	25.1
Incr Delay (d2), s/veh	7.1	1.0	0.5	36.1	0.0	0.6	24.3	0.4	0.8	4.6	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.5	1.7	10.5	0.0	3.3	3.2	1.6	1.8	2.3	3.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	31.4	30.0	63.9	0.0	17.7	58.8	24.5	25.0	38.6	26.0	26.8
LnGrp LOS	D	C	C	E	A	B	E	C	C	D	C	C
Approach Vol, veh/h		277			644			457			787	
Approach Delay, s/veh		32.4			44.9			33.8			28.1	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	23.3	25.0	16.6	11.0	24.2	6.4	35.3
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.6	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	8.1	6.4	21.6	8.8	7.2	10.6	3.4	12.2
Green Ext Time (p_c), s	0.1	3.2	0.0	0.7	0.0	7.0	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Existing PM | Old Town Complex
34: Pacific Hwy & Laurel St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	937	53	76	462	96	62	305	125	178	681	417
Future Volume (veh/h)	260	937	53	76	462	96	62	305	125	178	681	417
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	299	1077	61	87	531	110	71	351	144	205	783	479
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	327	1251	71	108	729	150	90	1053	404	229	1894	863
Arrive On Green	0.18	0.37	0.37	0.06	0.25	0.25	0.05	0.29	0.29	0.13	0.37	0.37
Sat Flow, veh/h	1767	3386	192	1767	2892	596	1767	3569	1368	1767	5066	1532
Grp Volume(v), veh/h	299	561	577	87	323	318	71	331	164	205	783	479
Grp Sat Flow(s),veh/h/ln	1767	1763	1815	1767	1763	1725	1767	1689	1560	1767	1689	1532
Q Serve(g_s), s	23.2	41.2	41.2	6.8	23.5	23.7	5.6	10.7	11.6	16.0	16.0	28.1
Cycle Q Clear(g_c), s	23.2	41.2	41.2	6.8	23.5	23.7	5.6	10.7	11.6	16.0	16.0	28.1
Prop In Lane	1.00		0.11	1.00		0.35	1.00		0.88	1.00		1.00
Lane Grp Cap(c), veh/h	327	651	670	108	444	435	90	996	460	229	1894	863
V/C Ratio(X)	0.92	0.86	0.86	0.81	0.73	0.73	0.79	0.33	0.36	0.89	0.41	0.55
Avail Cap(c_a), veh/h	437	718	739	159	444	435	155	996	460	323	1894	863
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	40.8	40.8	64.9	47.9	48.0	65.7	38.6	38.9	60.0	32.5	19.8
Incr Delay (d2), s/veh	19.9	10.4	10.2	10.4	5.1	5.5	5.8	0.9	2.2	16.2	0.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	19.7	20.2	3.4	11.0	10.9	2.7	4.6	4.8	8.2	6.7	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.9	51.2	51.0	75.3	53.1	53.5	71.5	39.5	41.0	76.2	33.1	22.4
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1437			728			566			1467	
Approach Delay, s/veh		56.2			55.9			43.9			35.6	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	46.6	13.8	57.0	11.5	57.6	30.3	40.6
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	18.0	13.6	8.8	43.2	7.6	30.1	25.2	25.7
Green Ext Time (p_c), s	0.2	3.0	0.0	8.5	0.0	4.3	0.6	1.9

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1162	1956	1330	134	78	5
Future Volume (veh/h)	1162	1956	1330	134	78	5
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1249	2103	1430	0	84	5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4313	2371		108	96
Arrive On Green	0.35	0.85	0.47	0.00	0.06	0.06
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1249	2103	1430	0	84	5
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	12.7	25.1	0.0	5.6	0.4
Cycle Q Clear(g_c), s	41.6	12.7	25.1	0.0	5.6	0.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4313	2371		108	96
V/C Ratio(X)	1.05	0.49	0.60		0.78	0.05
Avail Cap(c_a), veh/h	1188	4313	2371		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	2.3	23.6	0.0	55.5	53.1
Incr Delay (d2), s/veh	40.6	0.4	1.1	0.0	4.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	2.7	10.1	0.0	2.6	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	79.8	2.7	24.8	0.0	60.0	53.1
LnGrp LOS	F	A	C		E	D
Approach Vol, veh/h		3352	1430	A	89	
Approach Delay, s/veh		31.4	24.8		59.7	
Approach LOS		C	C		E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	107.5	12.5	46.0	61.5
Change Period (Y+Rc), s	5.3	5.2	4.4	* 5.3
Max Green Setting (Gmax), s	79.5	30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s	14.7	7.6	43.6	27.1
Green Ext Time (p_c), s	60.3	0.1	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	136	244	161	67	166	179	1130	124	140	1191	193
Future Volume (veh/h)	169	136	244	161	67	166	179	1130	124	140	1191	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	176	142	254	168	70	173	186	1177	129	146	1241	201
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	241	364	295	197	441	360	249	1289	141	176	1518	777
Arrive On Green	0.07	0.20	0.20	0.11	0.24	0.24	0.07	0.40	0.40	0.10	0.43	0.43
Sat Flow, veh/h	3428	1856	1502	1767	1856	1515	3428	3195	349	1767	3526	1549
Grp Volume(v), veh/h	176	142	254	168	70	173	186	648	658	146	1241	201
Grp Sat Flow(s),veh/h/ln	1714	1856	1502	1767	1856	1515	1714	1763	1781	1767	1763	1549
Q Serve(g_s), s	5.2	6.9	17.0	9.7	3.1	10.2	5.5	36.0	36.2	8.4	32.1	7.7
Cycle Q Clear(g_c), s	5.2	6.9	17.0	9.7	3.1	10.2	5.5	36.0	36.2	8.4	32.1	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	241	364	295	197	441	360	249	711	719	176	1518	777
V/C Ratio(X)	0.73	0.39	0.86	0.85	0.16	0.48	0.75	0.91	0.92	0.83	0.82	0.26
Avail Cap(c_a), veh/h	377	555	449	198	551	450	298	714	722	276	1676	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	36.3	40.3	45.2	31.3	34.0	47.1	29.2	29.3	45.8	25.9	14.8
Incr Delay (d2), s/veh	1.6	0.7	10.4	26.9	0.1	0.4	6.3	16.3	16.7	6.1	3.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.2	6.8	5.6	1.3	3.6	2.5	17.4	17.8	3.9	13.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	37.0	50.7	72.1	31.4	34.4	53.4	45.5	46.0	51.9	29.3	15.1
LnGrp LOS	D	D	D	E	C	C	D	D	D	D	C	B
Approach Vol, veh/h		572			411			1492			1588	
Approach Delay, s/veh		46.7			49.3			46.7			29.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	47.1	16.0	25.8	11.9	49.9	11.7	30.1
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	10.4	38.2	11.7	19.0	7.5	34.1	7.2	12.2
Green Ext Time (p_c), s	0.1	3.1	0.0	1.4	0.0	10.6	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing PM | Old Town Complex

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	999	200	198	495	0	0	0	0	149	0	955
Future Volume (veh/h)	0	999	200	198	495	0	0	0	0	149	0	955
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1052	211	208	521	0				157	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1233	550	1365	2813	0				188	0	
Arrive On Green	0.00	0.35	0.35	0.80	1.00	0.00				0.11	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1052	211	208	521	0				157	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	27.7	10.1	1.4	0.0	0.0				8.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.7	10.1	1.4	0.0	0.0				8.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1233	550	1365	2813	0				188	0	
V/C Ratio(X)	0.00	0.85	0.38	0.15	0.19	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1833	818	1365	2813	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.48	0.48	0.83	0.83	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	30.1	24.4	6.3	0.0	0.0				43.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.8	1.0	0.0	0.1	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.7	3.7	0.5	0.0	0.0				4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	34.0	25.4	6.3	0.1	0.0				47.6	0.0	0.0
LnGrp LOS	A	C	C	A	A	A				D	A	
Approach Vol, veh/h		1263			729						157	A
Approach Delay, s/veh		32.5			1.9						47.6	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	44.8	40.0		15.2		84.8
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	3.4	29.7		10.7		2.0
Green Ext Time (p_c), s	0.5	5.3		0.0		2.4

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Existing PM | Old Town Complex

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	753	463	0	0	429	315	260	4	507	0	0	0
Future Volume (veh/h)	753	463	0	0	429	315	260	4	507	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	761	468	0	0	433	318	263	4	512			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1065	2168	0	0	485	353	495	8	447			
Arrive On Green	0.52	1.00	0.00	0.00	0.25	0.25	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	1999	1388	1742	26	1572			
Grp Volume(v), veh/h	761	468	0	0	400	351	267	0	512			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1531	1768	0	1572			
Q Serve(g_s), s	17.0	0.0	0.0	0.0	21.9	22.2	12.7	0.0	28.4			
Cycle Q Clear(g_c), s	17.0	0.0	0.0	0.0	21.9	22.2	12.7	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.91	0.99		1.00			
Lane Grp Cap(c), veh/h	1065	2168	0	0	448	389	502	0	447			
V/C Ratio(X)	0.71	0.22	0.00	0.00	0.89	0.90	0.53	0.00	1.15			
Avail Cap(c_a), veh/h	1065	2168	0	0	494	429	502	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.7	0.0	0.0	0.0	36.0	36.1	30.2	0.0	35.8			
Incr Delay (d2), s/veh	1.5	0.1	0.0	0.0	22.7	26.4	0.6	0.0	89.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	0.0	11.9	10.9	5.4	0.0	32.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.1	0.0	0.0	58.7	62.5	30.8	0.0	125.0			
LnGrp LOS	C	A	A	A	E	E	C	A	F			
Approach Vol, veh/h		1229			751			779				
Approach Delay, s/veh		13.8			60.5			92.7				
Approach LOS		B			E			F				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	33.0	36.6	30.4
Change Period (Y+Rc), s	5.5	4.6	5.5	* 5
Max Green Setting (Gmax), s	61.5	28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s	2.0	30.4	19.0	24.2
Green Ext Time (p_c), s	2.1	0.0	2.3	1.3

Intersection Summary	
HCM 6th Ctrl Delay	48.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1007	10	351	780	0	1216
Future Volume (veh/h)	1007	10	351	780	0	1216
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1070	0	369	0	0	1280
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1203	548	1589		0	1589
Arrive On Green	0.34	0.00	0.45	0.00	0.00	0.45
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1070	0	369	0	0	1280
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	19.5	0.0	4.4	0.0	0.0	21.3
Cycle Q Clear(g_c), s	19.5	0.0	4.4	0.0	0.0	21.3
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1203	548	1589		0	1589
V/C Ratio(X)	0.89	0.00	0.23		0.00	0.81
Avail Cap(c_a), veh/h	1273	580	1589		0	1589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	11.5	0.0	0.0	16.1
Incr Delay (d2), s/veh	7.9	0.0	0.3	0.0	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	1.6	0.0	0.0	8.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.2	0.0	11.8	0.0	0.0	20.6
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1070		369	A		1280
Approach Delay, s/veh	29.2		11.8			20.6
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	36.2	36.2	31.8
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.4	23.3	21.5
Green Ext Time (p_c), s	3.2	5.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX E

EXISTING FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6133	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1124
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6094	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1117
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7447	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1366
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8611	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1579
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7046	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1560
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7510	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1663
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8013	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1774
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8007	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1773
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6978	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1545
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.6
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7438	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1647
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7936	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1757
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7930	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1756
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5285	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1463
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5633	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1559
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6010	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1663
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6005	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1662
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5420	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1500
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5777	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1599
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.3
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6164	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1706
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6159	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1704
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7012	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1552
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7474	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1655
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7974	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1765
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7968	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1764
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7012	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1552
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.2
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7474	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1655
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7974	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1765
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.5
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7968	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1764
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.5
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5894	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1631
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6283	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1739
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.9
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6703	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1855
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.5
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6698	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1854
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.5
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7419	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1643
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7907	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1751
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8437	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.1
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8430	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1866
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7419	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1643
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7907	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1751
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8437	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8430	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1866
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.9
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3386	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	926
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2649	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	724
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	11.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4298	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1175
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4138	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1131
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.8
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3947	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1079
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5414	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1480
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5571	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2030
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4252	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1550
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5730	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1253
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7860	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1719
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8088	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1769
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6173	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1350
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5877	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1606
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8061	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2203
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8294	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1814
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6331	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1384
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6344	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1732
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8702	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2376
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8954	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1956
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Existing
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6835	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1493
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX F

RIDERSHIP & TRIP GENERATION ESTIMATES FOR PROPOSED AUTOMATED PEOPLE MOVER, PREPARED BY WSP, MARCH 31, 2020

MEMORANDUM

TO: Sharon Humphreys, Richard Chavez, Rachel Kennedy, Danny Veeh & Keith Greer (SANDAG)

FROM: Seth Torma, Pete Ruscitti & Ryan Whipple (WSP)

SUBJECT: **Ridership & Trip Generation Estimates for Proposed Automated People Mover**

DATE: March 31, 2020

To respond to U.S. Navy requests for information to support the *Navy Old Town Campus Revitalization Draft Environmental Impact Statement (EIS)* traffic analysis, this memorandum documents the basis of the preliminary daily ridership estimates included in SANDAG's 2019 *Airport Connectivity Analysis* for a potential automated people mover (APM) connecting San Diego International Airport (SDIA) to a proposed Central Mobility Hub (CMH). Vehicular traffic generation estimates for the APM are also provided. This memorandum focuses on Concepts 1 and 2 from the *Airport Connectivity Analysis*, as these two concepts included a CMH at the Naval Information Warfare Systems Command (NAVWAR) site.

BACKGROUND

In December 2018, SANDAG established a temporary subcommittee of the Board of Directors, advisory in nature, to identify future transportation solutions to improve vehicular and transit connectivity to SDIA. The work of the Airport Connectivity Subcommittee began in December 2018 and concluded September 2019 with the release of the *Airport Connectivity Analysis*. As part of this preliminary study, SANDAG developed initial ridership estimates for several new transit connections to SDIA, including two options for an APM connecting to a potential CMH at the Naval Base Point Loma Old Town Complex (or NAVWAR). At the conclusion of that effort, SANDAG recognized that additional work was required to refine the proposed concepts. The *Airport Connectivity Analysis* acknowledges this need and recommends additional modeling and evaluation of potential transit ridership.

As discussed above, the Navy and other stakeholders should recognize that SANDAG will conduct additional planning, modeling analysis, preliminary engineering, environmental analysis, and interagency coordination to refine the transit ridership projections associated with the potential CMH and APM. Similarly, SANDAG will work directly with the San Diego County Regional Airport Authority (SDCRAA), the Unified Port of San Diego, the City of San Diego, and other stakeholders to develop further concepts for roadway improvements on Harbor Drive, Laurel Street, Grape Street, Hawthorn Street, and other key access roads, as well as conceptual designs for the potential APM alignments.

This memorandum also discusses several off-model adjustments that SANDAG included in the *Airport Connectivity Analysis* to evaluate the potential APM ridership. These adjustments should not be relied upon to finalize roadway plans, traffic mitigations, or

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other related infrastructure until further analysis and stakeholder coordination has been conducted.

ANALYSIS INPUT

Table 1 shows the ridership estimates from the *Airport Connectivity Analysis* associated with Concepts 1 and 2, which include connecting the SDIA to the NAVWAR facility with an APM either in a tunnel or above grade. The ridership estimate consists of two components, which are detailed further in the sections that follow:

- Modeled APM ridership to SDIA—represented as boardings and alightings—derived from the SANDAG Series 13 Regional Travel Demand Model (model)
- Off-model ridership adjustments accounting for design features and potential policies

As published in the *Airport Connectivity Analysis,* the data presented in Table 1 represent APM boardings and alightings at the SDIA terminals**,** whereas the key metric to estimate vehicular trip generation for the CMH is APM boardings and alightings at the CMH**.** These two values are the same in Concept 1 because the APM only serves the CMH and the SDIA terminals, without intermediate stops. The APM in Concept 2 serves two intermediate stops—the SDIA Rental Car Center and the planned development at Harbor Island East Basin—each with its own boardings and alightings. The Concept 2 APM has 19,800 boardings and alightings at the CMH, compared to 16,500 at the SDIA terminals.

Table 1 APM Daily Ridership at SDIA, 2050

	Modeled APM Ridership to/from SDIA	**Off-Model Adjustments for Design Features & Potential Policies**	**Total Potential APM Ridership to/from SDIA**
Concept 1 NAVWAR Tunnel APM	20,400	24,700	45,100
Concept 2 NAVWAR Surface APM	16,500 *(19,800 at CMH due to intermediate stops)*	27,600	44,100

Sources: SANDAG Airport Connectivity Analysis (2019), Table 5-2, pg. 41; SANDAG Series 13 Regional Travel Demand Model.

SDIA TRAFFIC-REDUCTION GOAL FROM STAKEHOLDERS

Stakeholder agencies informed SANDAG that, by 2050, an average daily traffic (ADT) reduction of approximately 30% would be needed at the SDIA terminals. This is necessary to allow Harbor Drive, Laurel Street, Grape Street, Hawthorn Street, and other SDIA access roadways to maintain traffic flow and avoid gridlock congestion. A subsequent traffic analysis will be performed by SANDAG to confirm this assumption.

CMH CONCEPTUAL DESIGN CAPACITY

Consistent with the traffic-reduction goal provided by stakeholders, the project team sized the CMH—in particular, the curb space for pickups/drop-offs—to accommodate approximately 30% of the anticipated daily traffic to SDIA in 2050.[1] Using 30% of the SDIA projected total of approximately 135,000 ADT at the terminals yields approximately 40,000 ADT for airport pickup/dropoff at the CMH.[2]

MODELED RIDERSHIP

The table provided as Attachment A to this memorandum specifies the modeled parameters that yielded the modeled APM ridership for Concept 1 and Concept 2. These model runs include the following key assumptions:

- Old Town Transit Center (OTTC) relocation to the CMH
- Elimination of the Middletown light rail transit station
- APM connection between the CMH and SDIA[3]
- Sub-regional transportation hub connections, featuring high-speed transit and transit-oriented development, representing SANDAG's *5 Big Moves* regional strategy
- Toll to enter the SDIA terminal driveways
- Land use, network, and other updates provided by stakeholders including:
  - *SDIA Airport Development Plan* data provided by SDCRAA
  - *Port Master Plan Update* details provided by the Unified Port of San Diego
  - Community plan assumptions provided by the City of San Diego
- **Concept 2 Only:** Additional APM stations serving the SDIA Rental Car Center and Harbor Island East Basin.

OFF-MODEL RIDERSHIP ADJUSTMENTS FOR DESIGN FEATURES & POTENTIAL POLICIES

The model has limitations that SANDAG will update and improve through future efforts, including the lack of a specific APM transit mode and the inability to simulate an airport-like pick-up and drop-off experience. In the interim, the project team estimates that up to 45,000 daily APM boardings and alightings—or greater—could be achieved through a combination of design features and potential policies.

The design features and policies that may increase ridership include, but are not limited to:

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[1] The SDIA proposed curb space is approximately 9,000 linear feet for both terminals combined, inclusive of arrivals, departures, and shared-ride services (taxis, shuttles, etc.). This equates to approximately 2,700 linear feet of CMH curb space to accommodate 30% of SDIA terminal traffic.
[2] The ADT estimate of 135,000 used in this analysis is from the *SDIA Airport Development Plan Draft EIR (2018),* Appendix H, pg. 5. The subsequent *SDIA Airport Development Plan Recirculated Draft EIR (2019)* revised this total to approximately 129,000.
[3] The SANDAG model does not include specific parameters to simulate an APM transit mode; therefore, in coordination with SANDAG modeling staff, light rail transit is used as a proxy. SANDAG consultants are currently developing additional functionality to better represent an APM transit mode.

- Airport-like pick-up and drop-off experience featuring dual-level roadways, curbside services, and direct connection to the APM station
- Sufficient curb length to accommodate airport-related traffic from multiple vehicle types (private vehicles, taxis, shuttle buses, etc.)
- Policies implementing variable tolling of SDIA driveways, which could divert private vehicles and other modes
- Policies diverting commercial modes to the CMH/APM (taxis, transportation network companies [TNCs], shared vans, courtesy shuttles, and off-airport parking shuttles)
- Policies to improve transit frequencies and connections to increase transit ridership
- Policies to improve active transportation access to the CMH to increase transit ridership
- Policies to improve transportation demand management for SDIA employees, such as a transportation management organization, vanpools, or microtransit to the CMH

These potential policies are not within SANDAG's purview, but are options that stakeholder agencies—including SDCRAA, the City of San Diego, and others—may choose to implement in order to meet the traffic reduction goals discussed above. They are conceptual in nature and are not anticipated to be all-inclusive and/or implemented at one time. A phased approach consistent with travel demand and congestion levels around SDIA could be considered when implementing any of these additional policies and programs. Further coordination with SDCRAA and other stakeholders is needed to determine the feasibility of implementing these policies.

The cumulative effect of shifting passengers to the APM using these potential policies—diversion of taxis, TNCs, shared vans, courtesy shuttles, and off-airport parking shuttles, as well as tolling the SDIA driveways (which would affect private vehicles)—is represented by the sum of these modes shown in Table 2. Implementing all potential policies could shift the majority of passengers to the CMH/APM and exceed the traffic-reduction goal set by stakeholder agencies.

To remain consistent with the stakeholder traffic-reduction goal as well as the CMH pickup/dropoff capacity described above, the project team capped the total daily APM passengers from pickup/dropoff at 40,000,[4] and total APM ridership at approximately 45,000. This includes an allowance of approximately 5,000 APM riders who connect via transit rather than pickup/dropoff, and assumes that policies would be applied cumulatively until the traffic-reduction goal is met.

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[4] This assumes a passenger load factor of 1.0, or one passenger per vehicle. Data from the *SDIA Airport Development Plan Recirculated Draft EIR* released after publication of SANDAG's *Airport Connectivity Analysis* estimated SDIA load factors to be 1.3 for most vehicles, 2.0 for courtesy shuttles, and 5.0 for shared vans. Applying these updated load factors would increase the potential APM ridership if the CMH were to accommodate the full goal of 30% of SDIA terminal traffic.

Table 2 Mode Share for SDIA Passengers without APM/Light Rail Connection, 2050

Mode	2050 Mode Share for SDIA Passengers	
Private Vehicles	31%	39,057
Rental Car	16%	20,158
Taxi	8%	10,079
TNC	24%	30,238
Shared Van	3%	3,780
Courtesy Shuttle	2%	2,520
Parking Off-Airport (Shuttles)	3%	3,780
Parking On-Airport	8%	10,079
Transit (MTS)	5%	6,299
TOTAL	**100%**	**125,990**

Source: SDCRAA SDIA Airport Development Plan Recirculated Draft EIR (2019), Appendix R-H4, pg. 70.

ESTIMATED AIRPORT TRANSIT MODE SHARE

The trip generation estimate uses the model's transit mode share for trips to/from SDIA to develop vehicular trip generation estimates from ridership estimates. These modeled transit mode shares are 16.8% for Concept 1 and 14.6% for Concept 2, with the remaining passengers arriving via the various modes described in Table 2. The specific airport transit mode share will depend on many factors, including improved regional transit, and further study and modeling is needed to develop a better estimate. Below, the modeled transit mode share results are compared to several other available sources.

The *SDIA Airport Development Plan* estimates a 5% transit mode share in 2050 without construction of an APM or CMH (Table 2). The *SDIA Airport Development Plan* also estimates that a transit mode share of 15% could be achieved if a new transit line (APM or light rail) and airport tolling were implemented.[5]

Data from other U.S. airports served by high-capacity transit indicates that an airport transit mode share of approximately 15% is achievable (without tolling), but this percentage is near the higher end of transit mode shares for U.S. airports. Major U.S. cities with higher densities and extensive transit networks like San Francisco, New York, and Washington D.C. have airport transit mode shares in the 17-23% range. Many smaller cities—with populations and densities similar to San Diego—have achieved 10-15% transit mode shares including New Orleans (15%), Denver (14%), Baltimore (12%), Las Vegas (12%), Orlando (11%), Seattle (11%), and Portland (10%).[6]

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[5] SDIA *Airport Development Plan Recirculated Draft EIR* (2019), Appendix R-H4, pg. 4.

[6] National Academies of Sciences, Engineering, and Medicine, *ACRP Report 4: Ground Access to Major Airports by Public Transportation* (2008), Table 2-1, pg. 36.

VEHICULAR TRIP GENERATION ESTIMATES

Applying the modeled transit mode shares as well as passenger load factors (by mode) and peak-hour factors derived from the *SDIA Airport Development Plan* yields the results in Table 3 and Table 4 (see following page). The tables show the Concept 1 and Concept 2 vehicular trip generation estimates for both the modeled APM ridership and the adjusted APM ridership described above.

Table 3 Vehicular Trip Generation Estimate for Proposed APM, 2050 (Concept 1, Tunnel APM)

User Type	Daily Vehicular Trips	AM Peak Hour (8-9) Inbound	AM Peak Hour (8-9) Outbound	SDIA Peak Hour (9-10) Inbound	SDIA Peak Hour (9-10) Outbound	PM Peak Hour (5-6) Inbound	PM Peak Hour (5-6) Outbound
Concept 1 Modeled Ridership (20,400)	9,700	275	275	300	300	250	250
Concept 1 Modeled Ridership + Off-Model Adjustments (45,100)	44,100	1,300	1,275	1,425	1,400	1,175	1,175

Source: WSP analysis based on data from SANDAG and SDCRAA. Daily values rounded to the nearest 100 trips; others rounded to nearest 25 trips.

Table 4 Vehicular Trip Generation Estimate for Proposed APM, 2050 (Concept 2, Surface APM)

User Type	Daily Vehicular Trips	AM Peak Hour (8-9) Inbound	AM Peak Hour (8-9) Outbound	SDIA Peak Hour (9-10) Inbound	SDIA Peak Hour (9-10) Outbound	PM Peak Hour (5-6) Inbound	PM Peak Hour (5-6) Outbound
Concept 2 Modeled Ridership (19,800)	11,300	325	325	375	350	300	300
Concept 2 Modeled Ridership + Off-Model Adjustments (44,100)	45,300	1,325	1,325	1,450	1,425	1,200	1,200

Source: WSP analysis based on data from SANDAG and SDCRAA. Daily values rounded to the nearest 100 trips; others rounded to nearest 25 trips.

APPENDIX G

SANDAG MODELING INPUTS

		4 **Navy No Build** No Airport Connection 2050rcN0
Policy	Central Mobility Hub concept	No
	Airport Passenger Demand	Unconstrained
	Airport Driveway Tolling	No
	Toll Cost	No
	Airport Parking Update	No
	Parking Cost	Existing
	CMH Parking	No
	Parking Cost	No
	Sub-regional transportation hubs	No
Land Use	NAVWAR Site	**740 Government Office employmees**
	ITC Site	No
	Mission Valley CPU	Yes
	Kearny Mesa CPU	Yes
	Midway / Old Town CPU	Yes
	Port Master Plan Update	Yes
	Replace Old Town Transit Center	No
	Replace COASTER station at ITC	No
	Replace Middletown Trolley Station	No
	Route 992	Yes
	R992 Base Mode	Local Bus
	R992 Line	Existing
	R992 Alignment	Existing
	R992 Stations	Existing
	R992 Frequency	Existing
	R992 Fare	Existing
	R992 Speed	Posted

Transit Network	**Automated People Mover**	No
	APM Base Mode	No
	APM Line	No
	APM Alignment	No
	APM Stations	No
	APM Frequency	No
	APM Fare	No
	APM Speed	No
	Trolley to Airport	No
	Trolley Base Mode	No
	Trolley Line	No
	Trolley Alignment	No
	Trolley Stations	No
	Trolley Frequency	No
	Trolley Fare	No
	Trolley Speed	No
	Harbor Dr Transit Lanes	No
	Harbor Transit Lanes Base Mode	No
	Transit Lanes Line	No
	Transit Lanes Alignment	No
	Transit Lanes Stations	No
	Transit Lanes Frequency	No
	Transit Lanes Fare	No
	Transit Lanes Speed	No
	Sub-regional transportation hub connections	No
	SRTH Base Mode	No
	SRTH Line	No
	SRTH Alignment	No
	SRTH Stations	No
	SRTH Frequency	No
	SRTH Fare	No
	SRTH Speed	No
	SRTH Land Uses	No
	Mission Valley CPU	Yes
	Old Town Ave Interchange	Existing
	NAVWAR DAR	No

Freeway / Arterial Network	NAVWAR Diveways	Existing
	Washington Ave Interchange	Existing
	Washington Ave DAR	No
	Hawthorn Interchange	Existing
	Grape Interchange	Existing
	Harbor Dr	Existing
	Laurel St / Harbor Dr Intersection	Existing
	Laurel St / Pac Hwy Intersection	Existing
	Laurel St e/o Pac Hwy	Existing
	Laurel St w/o Pac Hwy	Existing
	Laurel St Interchange	Existing
	I-5 / Pac Hwy North-Facing Direct Connectors	No
	I-5 / Pac Hwy South-Facing Direct Connectors	No
	Other Freeway Modifications	No
	Other Local Road Modifications	No
	Port Master Plan Update	Yes
	Active Transportation Network	MV CPU plus walkway to Old Town and new station connections

*** ATTORNEY / CLIENT PRIVILEGE *** Pre-Decisional For Official Use Only ***

Table 2: Navy & P3 Alternatives

	Alternative 1 - Navy Recapitalizaion Only				**Alternative 3 - without Transit Center (Low)**				**Alternative 2 - without Transit Center (High)**				**Alternative 5 - with Transit Center (Low)**				**Alternative 4 - with Transit Center (High)**			
Navy Development	Use SF	Units / Rooms	Parking SF	Parking Stalls	Use SF[1]	Units / Rooms	Parking SF	Parking Stalls	Use SF[1]	Units / Rooms	Parking SF	Parking Stalls	Use SF[1]	Units / Rooms	Parking SF	Parking Stalls	Use SF[1]	Units / Rooms	Parking SF	Parking Stalls
Office	1,019,364				845,326				845,326				845,326				845,326			
Laboratory	174,865				165,614				165,614				165,614				165,614			
Auditorium	12,000				15,000				15,000				15,000				15,000			
Conference Rooms	14,156				14,156				14,156				14,156				14,156			
Warehouse	481,941				24,172				24,172				24,172				24,172			
Open Storage	174,267																			
Parking			1,430,415	4,541			630,000	2,000			630,000	2,000			630,000	2,000			630,000	2,000
Navy SubTotal	1,876,593		1,430,415	4,541	1,064,268		630,000	2,000	1,064,268		630,000	2,000	1,064,268		630,000	2,000	1,064,268		630,000	2,000
Private Development	Use SF	Units / Rooms	Parking SF	Parking Stalls	Use SF[3]	Units / Rooms	Parking SF[6]	Parking Stalls	Use SF[2]	Units / Rooms	Parking SF[6]	Parking Stalls	Use SF[4]	Units / Rooms	Parking SF[6]	Parking Stalls	Use SF[5]	Units / Rooms	Parking SF[6]	Parking Stalls
Residential[7]	-				4,224,000	4,400	2,217,600	6,336	6,336,000	6,600	3,326,400	9,504	7,680,000	8,000	4,032,000	11,520	9,600,000	10,000	5,040,000	14,400
Office[8]	-				650,000		341,250	975	1,000,000		525,000	1,500	850,000		446,250	1,275	1,350,000		708,750	2,025
Hotel[9]	-				160,000	250	87,500	250	260,000	400	140,000	400	290,000	450	157,500	450	290,000	450	157,500	450
Retail[10]	-				130,000		95,550	273	180,000		132,300	378	200,000		147,000	420	250,000		183,750	525
Tansit Circulation	-				-				-				-				-			
Transit Center[11]	-				-		-	-	-		-	-	140,000		397,600	1,136	140,000		397,600	1,136
Private SubTotal	-		-	-	5,164,000		2,741,900	7,834	7,776,000		4,123,700	11,782	9,160,000		5,180,350	14,801	11,630,000		6,487,600	18,536
Alternative Total	1,876,593		1,430,415	4,541	6,228,268		3,371,900	9,834	8,840,268		4,753,700	13,782	10,224,268		5,810,350	16,801	12,694,268		7,117,600	20,536
	3,307,008				**9,600,168**				**13,593,968**				**16,034,618**				**19,811,868**			

1 Use SF values were derived from the 15 November 2019 NAVWAR Revitalization Requirements Package
2 Use SF values were derived from confidential data received by the Navy as part of the Request for Interest process conducted in 2018
3 Use SF values were derived from confidential data received by the Navy as part of the Request for Interest process conducted in 2018, the value for Hotel was borrowed from the more detailed SANDAG analysis
4 Use SF values were derived inpart from data presented during a coordination meeting between SANDAG and the Navy on 14 January 2020
5 Use SF values were derived inpart from data presented during a coordination meeting between SANDAG and the Navy on 14 January 2020
6 All Private Development parking stalls are assumed to be 350 SF (8'3"W x 18'L + 24'Aisle) per Tables 142-05K and 142-05L in SD Muni Code Art2 Ch14
7 Residential parking stalls are calculated at a rate of 1.5 space per 1,000 SF, which is the mid-point between Studios and 3-4 Bedroom units per Table 142-05C in SD Muni Code Art2 Ch14
8 To be conservative Office parking stalls are calculated at a rate of 1.5 spaces per 1,000 SF, which is the Minimum Requird Outside a Transit Area for EMX zones per Table 142-05E in SD Muni Code Art2 Ch14
9 Hotel parking stalls are calculated at a rate of 1 space per Room, which is the Minimum Required Inside a Transit Area per Table 142-05G in SD Muni Code Art2 Ch14
10 Retail parking stalls are calculated at a rate of 2.1 space per 1,000 SF, which is the Minimum Required Inside a Transit Area for the CN 1-6, CV 1-2, CC 2-4, CC 3-6, CC 4-6, CC 5-6 zones per Table 142-05E in SD Muni Code Art2 Ch14
11 Transit Center parking stalls are calculated based on 2% of anticipated ridership (Existing Old Town + 25% of Mid-Coast + SANDAG SDIA Tunnel)

APPENDIX H

YEAR 2050 NO ACTION ALTERNATIVE INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	710
Future Volume (vph)	190	210	90	140	140	710
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	772

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	772
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	772
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.69
Capacity (veh/h)	610	667	741	577	1119
Control Delay (s)	10.4	9.6	9.9	10.5	12.9
Approach Delay (s)	10.0		9.9	12.5	
Approach LOS	A		A	B	

Intersection Summary			
Delay	11.4		
Level of Service	B		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	240	120	740	60	280	190
Future Volume (veh/h)	240	120	740	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	255	128	787	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	316	1099	1158		534	526
Arrive On Green	0.18	0.59	0.33	0.00	0.16	0.16
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	255	128	787	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	6.9	1.5	9.6	0.0	4.0	4.9
Cycle Q Clear(g_c), s	6.9	1.5	9.6	0.0	4.0	4.9
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	316	1099	1158		534	526
V/C Ratio(X)	0.81	0.12	0.68		0.56	0.38
Avail Cap(c_a), veh/h	706	2059	2205		1557	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	4.4	14.4	0.0	19.3	12.6
Incr Delay (d2), s/veh	1.9	0.0	0.3	0.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.4	3.3	0.0	1.4	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.4	4.4	14.7	0.0	19.7	12.8
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		383	787	A	500	
Approach Delay, s/veh		15.7	14.7		16.9	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		35.3		14.2	13.1	22.3
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.5		6.9	8.9	11.6
Green Ext Time (p_c), s		0.5		0.9	0.3	3.7

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	250	0	0	10	360	250	5	10	730	220
Future Volume (veh/h)	140	5	250	0	0	10	360	250	5	10	730	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	263				379	263	5	11	768	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	841	0	573				463	1739	33	20	966	292
Arrive On Green	0.24	0.00	0.24				0.13	0.49	0.49	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1517				3428	3536	67	1767	2624	793
Grp Volume(v), veh/h	151	0	263				379	131	137	11	516	484
Grp Sat Flow(s),veh/h/ln	1767	0	1517				1714	1763	1840	1767	1763	1654
Q Serve(g_s), s	1.9	0.0	7.4				6.1	2.3	2.3	0.3	14.7	14.7
Cycle Q Clear(g_c), s	1.9	0.0	7.4				6.1	2.3	2.3	0.3	14.7	14.7
Prop In Lane	1.00		1.00				1.00		0.04	1.00		0.48
Lane Grp Cap(c), veh/h	841	0	573				463	867	905	20	649	609
V/C Ratio(X)	0.18	0.00	0.46				0.82	0.15	0.15	0.55	0.80	0.80
Avail Cap(c_a), veh/h	1882	0	1020				463	867	905	160	714	670
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	13.4				23.7	7.9	7.9	27.7	15.9	15.9
Incr Delay (d2), s/veh	0.2	0.0	0.9				10.4	0.1	0.1	8.7	6.1	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2				2.9	0.7	0.8	0.2	6.2	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	14.3				34.1	7.9	7.9	36.4	22.0	22.4
LnGrp LOS	B	A	B				C	A	A	D	C	C
Approach Vol, veh/h		414						647			1011	
Approach Delay, s/veh		15.4						23.3			22.4	
Approach LOS		B						C			C	

Timer - Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.0	32.6		18.7	12.0	25.6		
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8		
Max Q Clear Time (g_c+I1), s	2.3	4.3		9.4	8.1	16.7		
Green Ext Time (p_c), s	0.0	1.6		2.6	0.0	3.8		

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	80	10	210	50	400	30	130	670	40
Future Volume (veh/h)	10	10	10	80	10	210	50	400	30	130	670	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	83	10	219	52	417	31	135	698	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	220	211	166	185	50	329	74	1417	104	174	1185	71
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	386	680	533	289	162	1060	1767	4797	351	1767	3367	202
Grp Volume(v), veh/h	30	0	0	312	0	0	52	292	156	135	365	375
Grp Sat Flow(s),veh/h/ln	1600	0	0	1510	0	0	1767	1689	1770	1767	1763	1807
Q Serve(g_s), s	0.0	0.0	0.0	4.5	0.0	0.0	1.4	3.2	3.3	3.6	8.1	8.1
Cycle Q Clear(g_c), s	0.6	0.0	0.0	8.4	0.0	0.0	1.4	3.2	3.3	3.6	8.1	8.1
Prop In Lane	0.33		0.33	0.27		0.70	1.00		0.20	1.00		0.11
Lane Grp Cap(c), veh/h	597	0	0	564	0	0	74	998	523	174	621	636
V/C Ratio(X)	0.05	0.00	0.00	0.55	0.00	0.00	0.71	0.29	0.30	0.78	0.59	0.59
Avail Cap(c_a), veh/h	1052	0	0	1031	0	0	206	1764	925	390	1104	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	14.2	0.0	0.0	22.7	13.1	13.1	21.1	12.7	12.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	4.6	0.2	0.4	2.8	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.5	0.0	0.0	0.6	1.1	1.2	1.5	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	0.0	0.0	14.6	0.0	0.0	27.3	13.3	13.5	24.0	13.9	13.9
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			312			500			875	
Approach Delay, s/veh		11.6			14.6			14.8			15.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	19.1		19.8	6.4	21.8		19.8
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	5.6	5.3		2.6	3.4	10.1		10.4
Green Ext Time (p_c), s	0.1	3.7		0.1	0.0	6.1		1.3

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

5: Congress St & Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	340	230	180	590	0	180	0	150	0	0	0
Future Volume (veh/h)	0	340	230	180	590	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	351	237	186	608	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	882	385	232	1571	0	426	0	314	0	380	0
Arrive On Green	0.00	0.33	0.33	0.13	0.57	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2790	1161	1767	2849	0	1258	0	1531	0	1856	0
Grp Volume(v), veh/h	0	351	237	186	608	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1161	1767	1388	0	1258	0	1531	0	1856	0
Q Serve(g_s), s	0.0	4.3	7.3	4.4	5.2	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.3	7.3	4.4	5.2	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	882	385	232	1571	0	426	0	314	0	380	0
V/C Ratio(X)	0.00	0.40	0.62	0.80	0.39	0.00	0.44	0.00	0.49	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1562	682	232	2280	0	1054	0	1079	0	1346	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.0	12.0	18.0	5.2	0.0	15.9	0.0	15.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	1.5	17.0	0.1	0.0	0.3	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.7	2.6	0.9	0.0	1.5	0.0	1.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.3	13.5	35.0	5.2	0.0	16.1	0.0	15.5	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		588			794			341			0	
Approach Delay, s/veh		12.2			12.2			15.8			0.0	
Approach LOS		B			B			B				
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.0	19.1		13.7		29.1		13.7				
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9				
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1				
Max Q Clear Time (g_c+I1), s	6.4	9.3		0.0		7.2		7.9				
Green Ext Time (p_c), s	0.0	3.5		0.0		2.9		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			12.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

6: Pacific Hwy & Rosecrans St/Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	310	230	320	270	180	280	490	210	80	330	200
Future Volume (veh/h)	110	310	230	320	270	180	280	490	210	80	330	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.93	1.00		0.95	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	118	333	247	344	290	194	301	527	226	86	355	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	876	530	325	518	407	139	998	483	102	979	387
Arrive On Green	0.08	0.32	0.32	0.12	0.35	0.35	0.08	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1767	2776	1285	2699	1461	1148	1767	3526	1178	1391	3526	1395
Grp Volume(v), veh/h	118	333	247	344	290	194	301	527	226	86	355	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1285	1350	1461	1148	1767	1763	1178	1391	1763	1395
Q Serve(g_s), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.2	16.0	6.9	9.1	14.9
Cycle Q Clear(g_c), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.2	16.0	6.9	9.1	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	876	530	325	518	407	139	998	483	102	979	387
V/C Ratio(X)	0.82	0.38	0.47	1.06	0.56	0.48	2.16	0.53	0.47	0.84	0.36	0.56
Avail Cap(c_a), veh/h	147	888	535	325	522	410	139	1184	545	111	1187	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	30.0	25.6	49.6	29.3	28.3	52.0	34.1	24.8	51.6	32.7	34.8
Incr Delay (d2), s/veh	27.2	0.3	0.8	65.8	0.9	0.5	544.9	0.4	0.7	36.3	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.6	5.0	7.5	6.4	4.1	25.0	6.1	4.5	3.4	3.9	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	30.4	26.4	115.5	30.3	28.7	596.9	34.5	25.5	87.9	32.8	35.3
LnGrp LOS	E	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		698			828			1054			656	
Approach Delay, s/veh		37.0			65.3			193.2			40.8	
Approach LOS		D			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	41.5	14.3	38.0	14.6	45.9	13.7	38.6				
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7				
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9				
Max Q Clear Time (g_c+I1), s	15.6	18.3	10.9	16.9	9.4	20.0	8.9	18.0				
Green Ext Time (p_c), s	0.0	3.7	0.0	2.0	0.0	1.6	0.0	4.4				
Intersection Summary												
HCM 6th Ctrl Delay			95.9									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	600	610	140
Future Vol, veh/h	50	30	70	600	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	612	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1246	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	177	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	345	706	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43.5	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	172	-	-
HCM Lane V/C Ratio	0.101	-	0.475	-	-
HCM Control Delay (s)	10.7	-	43.5	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	380	360	2020	0	0	2580	630
Future Volume (veh/h)	0	0	0	90	650	380	360	2020	0	0	2580	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	392	371	2082	0	0	2660	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				89	655	412	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				264	1935	1219	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				648	0	507	371	2082	0	0	2660	649
Grp Sat Flow(s),veh/h/ln				1842	0	1576	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	533	341	3632	0	0	2463	736
V/C Ratio(X)				1.04	0.00	0.95	1.09	0.57	0.00	0.00	1.08	0.88
Avail Cap(c_a), veh/h				624	0	533	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.23	0.23	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.9	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				46.6	0.0	26.7	51.0	0.2	0.0	0.0	44.1	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				27.9	0.0	19.7	13.7	0.1	0.0	0.0	34.7	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				89.6	0.0	68.7	90.9	0.2	0.0	0.0	77.5	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1155			2453			3309	
Approach Delay, s/veh					80.4			13.9			71.0	
Approach LOS					F			B			E	

Timer - Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1		
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9		
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63		
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2		
Green Ext Time (p_c), s		8.6		0.0	0.0	0.0		

Intersection Summary	
HCM 6th Ctrl Delay	52.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1760	30	300	2490	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1760	30	300	2490	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	1853	32	316	2621	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2366	41	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5293	88	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1220	665	316	2621	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1837	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	848	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.78	0.78	1.08	0.62	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	848	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.59	0.59	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.2	3.2	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	2.4	4.3	40.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	2.0	2.7	11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	5.6	7.5	84.2	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						1885			2937	
Approach Delay, s/veh		52.4						6.3			9.1	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	26.0	64.9	39.1	90.9
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	23.6	15.1	30.9	2.0
Green Ext Time (p_c), s	0.0	5.8	1.1	14.5

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	300	20	210	0	370	0	440	210	90	320	0
Future Volume (veh/h)	300	300	20	210	0	370	0	440	210	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.84	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	323	22	226	0	398	0	473	226	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	497	481	33	0	0	0	0	844	398	395	1868	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.39	0.39	0.06	0.53	0.00
Sat Flow, veh/h	1767	1712	117		0		0	2273	1027	1767	3618	0
Grp Volume(v), veh/h	323	0	345		0.0		0	381	318	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1829				0	1763	1444	1767	1763	0
Q Serve(g_s), s	8.3	0.0	8.7				0.0	8.8	9.0	1.6	2.6	0.0
Cycle Q Clear(g_c), s	8.3	0.0	8.7				0.0	8.8	9.0	1.6	2.6	0.0
Prop In Lane	1.00		0.06				0.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h	497	0	514				0	682	559	395	1868	0
V/C Ratio(X)	0.65	0.00	0.67				0.00	0.56	0.57	0.25	0.18	0.00
Avail Cap(c_a), veh/h	787	0	814				0	819	671	483	2317	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	16.5				0.0	12.4	12.5	8.7	6.4	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.5				0.0	3.3	4.2	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	3.4				0.0	3.5	3.1	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	18.0				0.0	15.7	16.6	8.8	6.6	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		668						699			441	
Approach Delay, s/veh		17.9						16.1			7.1	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	7.4	25.0	19.5	32.4
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	3.6	11.0	10.7	4.6
Green Ext Time (p_c), s	0.0	8.1	2.6	6.4

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	300	140	200	310	20	140	1590	350	0	2080	490
Future Volume (veh/h)	220	300	140	200	310	20	140	1590	350	0	2080	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	183	385	147	186	361	21	147	1674	368	0	2189	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	392	823	314	214	420	24	140	2160	469	0	2221	
Arrive On Green	0.22	0.22	0.22	0.12	0.12	0.12	0.08	1.00	1.00	0.00	0.88	0.00
Sat Flow, veh/h	1767	3711	1417	1767	3465	201	3428	4147	900	0	5233	1572
Grp Volume(v), veh/h	183	385	147	186	193	189	147	1359	683	0	2189	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1417	1767	1856	1810	1714	1689	1670	0	1689	1572
Q Serve(g_s), s	11.7	11.7	11.7	13.4	13.2	13.4	5.3	0.0	0.0	0.0	50.9	0.0
Cycle Q Clear(g_c), s	11.7	11.7	11.7	13.4	13.2	13.4	5.3	0.0	0.0	0.0	50.9	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.54	0.00		1.00
Lane Grp Cap(c), veh/h	392	823	314	214	225	219	140	1759	870	0	2221	
V/C Ratio(X)	0.47	0.47	0.47	0.87	0.86	0.86	1.05	0.77	0.79	0.00	0.99	
Avail Cap(c_a), veh/h	489	1028	392	245	257	251	140	1759	870	0	2221	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	0.57	0.57	0.57	0.00	0.75	0.00
Uniform Delay (d), s/veh	43.9	43.9	43.9	56.1	56.0	56.1	59.7	0.0	0.0	0.0	7.6	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.4	20.9	18.3	19.8	71.7	1.9	4.1	0.0	13.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.4	4.2	7.2	7.3	7.3	3.6	0.5	1.0	0.0	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	44.1	44.3	77.0	74.3	75.9	131.4	1.9	4.1	0.0	21.1	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	C	
Approach Vol, veh/h		715			568			2189			2189	A
Approach Delay, s/veh		44.2			75.7			11.3			21.1	
Approach LOS		D			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		73.6		34.7	10.7	62.9		21.6
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		2.0		13.7	7.3	52.9		15.4
Green Ext Time (p_c), s		7.2		1.1	0.0	0.0		0.3

Intersection Summary		
HCM 6th Ctrl Delay		25.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	300	160	150	410	210	200	1560	140	300	1670	170
Future Volume (veh/h)	300	300	160	150	410	210	200	1560	140	300	1670	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	312	312	167	156	427	219	208	1625	146	312	1740	177
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	700	300	171	659	278	258	1748	157	621	2239	227
Arrive On Green	0.10	0.20	0.20	0.10	0.19	0.19	0.08	0.37	0.37	0.36	0.96	0.96
Sat Flow, veh/h	3428	3526	1513	1767	3526	1486	3428	4720	423	3428	4662	472
Grp Volume(v), veh/h	312	312	167	156	427	219	208	1162	609	312	1259	658
Grp Sat Flow(s),veh/h/ln	1714	1763	1513	1767	1763	1486	1714	1689	1766	1714	1689	1758
Q Serve(g_s), s	11.7	10.1	12.9	11.4	14.6	18.3	7.8	42.9	43.1	9.2	7.5	7.7
Cycle Q Clear(g_c), s	11.7	10.1	12.9	11.4	14.6	18.3	7.8	42.9	43.1	9.2	7.5	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.27
Lane Grp Cap(c), veh/h	359	700	300	171	659	278	258	1251	654	621	1622	844
V/C Ratio(X)	0.87	0.45	0.56	0.91	0.65	0.79	0.81	0.93	0.93	0.50	0.78	0.78
Avail Cap(c_a), veh/h	359	881	378	171	854	360	282	1343	702	621	1622	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62	0.23	0.23	0.23
Uniform Delay (d), s/veh	57.3	45.8	46.9	58.1	48.9	50.4	59.2	39.3	39.3	36.9	1.5	1.5
Incr Delay (d2), s/veh	19.2	0.2	0.6	43.2	0.4	6.3	8.5	9.1	15.4	0.1	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	4.5	4.9	7.1	6.5	7.3	3.7	19.0	21.0	3.5	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	46.0	47.5	101.3	49.3	56.7	67.7	48.4	54.7	36.9	2.4	3.2
LnGrp LOS	E	D	D	F	D	E	E	D	D	D	A	A
Approach Vol, veh/h		791			802			1979			2229	
Approach Delay, s/veh		58.4			61.4			52.3			7.5	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.2	53.1	17.0	30.7	14.2	68.1	18.5	29.2
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	11.2	45.1	13.4	14.9	9.8	9.7	13.7	20.3
Green Ext Time (p_c), s	0.1	3.1	0.0	0.8	0.0	6.2	0.0	1.1

Intersection Summary		
HCM 6th Ctrl Delay		37.2
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

13: Rosecrans St & Lytton St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	340	10	650	360	120	10	1160	540	120	1620	230
Future Volume (veh/h)	390	340	10	650	360	120	10	1160	540	120	1620	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	398	347	10	663	367	122	10	1184	551	122	1653	235
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	394	11	612	409	334	21	2043	618	169	1555	666
Arrive On Green	0.17	0.22	0.22	0.18	0.22	0.22	0.01	0.40	0.40	0.10	0.88	0.88
Sat Flow, veh/h	1767	1792	52	3428	1856	1517	1767	5066	1534	3428	3526	1511
Grp Volume(v), veh/h	398	0	357	663	367	122	10	1184	551	122	1653	235
Grp Sat Flow(s),veh/h/ln	1767	0	1844	1714	1856	1517	1767	1689	1534	1714	1763	1511
Q Serve(g_s), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	23.7	43.5	4.5	57.3	1.9
Cycle Q Clear(g_c), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	23.7	43.5	4.5	57.3	1.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	405	612	409	334	21	2043	618	169	1555	666
V/C Ratio(X)	1.30	0.00	0.88	1.08	0.90	0.36	0.49	0.58	0.89	0.72	1.06	0.35
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	2043	618	232	1555	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	0.56	0.56	0.56
Uniform Delay (d), s/veh	53.7	0.0	49.1	53.4	49.2	30.7	63.9	30.2	36.1	57.7	7.7	1.3
Incr Delay (d2), s/veh	155.0	0.0	14.3	58.8	14.1	0.2	6.4	1.2	17.5	1.9	36.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	0.0	12.8	15.0	13.2	2.8	0.4	9.7	19.0	1.9	11.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	208.7	0.0	63.3	112.2	63.4	30.9	70.3	31.4	53.7	59.6	44.5	2.1
LnGrp LOS	F	A	E	F	E	C	E	C	D	E	F	A
Approach Vol, veh/h		755			1152			1745			2010	
Approach Delay, s/veh		140.0			88.1			38.7			40.5	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	58.1	27.6	33.5	5.9	63.0	27.5	33.6
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	16.5	45.5	25.2	26.4	2.7	59.3	24.6	27.0
Green Ext Time (p_c), s	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary		
HCM 6th Ctrl Delay		62.9
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

14: Truxtun Rd & Lytton St/Barnett Ave

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	790	210	650	970	90	180
Future Volume (veh/h)	790	210	650	970	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	832	221	684	1021	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	847	225	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2816	723	1767	3618	538	1071
Grp Volume(v), veh/h	539	514	684	1021	285	0
Grp Sat Flow(s),veh/h/ln	1763	1683	1767	1763	1615	0
Q Serve(g_s), s	27.3	27.3	28.5	12.0	15.2	0.0
Cycle Q Clear(g_c), s	27.3	27.3	28.5	12.0	15.2	0.0
Prop In Lane		0.43	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	524	560	2370	344	0
V/C Ratio(X)	0.98	0.98	1.22	0.43	0.83	0.00
Avail Cap(c_a), veh/h	549	524	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.7	30.7	30.7	6.8	33.8	0.0
Incr Delay (d2), s/veh	27.7	28.6	115.4	0.6	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	14.8	29.5	4.0	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.5	59.4	146.1	7.4	41.4	0.0
LnGrp LOS	E	E	F	A	D	A
Approach Vol, veh/h	1053			1705	285	
Approach Delay, s/veh	58.9			63.0	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	32.5	33.4	65.9	24.1
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	28.5	* 23	54.7	25.0
Max Q Clear Time (g_c+I1), s	30.5	29.3	14.0	17.2
Green Ext Time (p_c), s	0.0	0.0	9.4	0.3

Intersection Summary		
HCM 6th Ctrl Delay		59.6
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	320	650	30	0	610
Future Vol, veh/h	0	320	650	30	0	610
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	368	747	34	0	701

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	411	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	587	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	576	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	576	-
HCM Lane V/C Ratio	-	-	0.639	-
HCM Control Delay (s)	-	-	21.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.5	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	980	1570	680	530	80
Future Volume (veh/h)	0	980	1570	680	530	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1000	1602	694	541	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1921	1921	1173	757	
Arrive On Green	0.00	0.54	0.54	0.54	0.22	0.00
Sat Flow, veh/h	0	3711	3618	1516	3428	1572
Grp Volume(v), veh/h	0	1000	1602	694	541	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1516	1714	1572
Q Serve(g_s), s	0.0	8.2	17.1	8.9	6.6	0.0
Cycle Q Clear(g_c), s	0.0	8.2	17.1	8.9	6.6	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1921	1921	1173	757	
V/C Ratio(X)	0.00	0.52	0.83	0.59	0.71	
Avail Cap(c_a), veh/h	0	1980	1980	1199	1819	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	8.6	2.3	16.3	0.0
Incr Delay (d2), s/veh	0.0	0.2	3.2	0.8	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	5.0	3.9	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.8	11.8	3.0	17.3	0.0
LnGrp LOS	A	A	B	A	B	
Approach Vol, veh/h		1000	2296		541	A
Approach Delay, s/veh		6.8	9.1		17.3	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.0		15.2		30.0
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		10.2		8.6		19.1
Green Ext Time (p_c), s		6.2		1.4		5.5

Intersection Summary			
HCM 6th Ctrl Delay			9.7
HCM 6th LOS			A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	40	5	40	140	740	50	130	620	170
Future Volume (veh/h)	30	0	50	40	5	40	140	740	50	130	620	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	47	6	47	165	871	59	153	729	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	180	32	153	413	29	223	210	1769	119	196	1405	380
Arrive On Green	0.16	0.00	0.16	0.16	0.16	0.16	0.12	0.37	0.37	0.11	0.36	0.36
Sat Flow, veh/h	362	193	935	1314	174	1364	1767	4831	326	1767	3924	1060
Grp Volume(v), veh/h	94	0	0	47	0	53	165	608	322	153	626	303
Grp Sat Flow(s),veh/h/ln	1490	0	0	1314	0	1538	1767	1689	1779	1767	1689	1607
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.2	3.7	5.7	5.7	3.4	6.0	6.1
Cycle Q Clear(g_c), s	2.1	0.0	0.0	0.9	0.0	1.2	3.7	5.7	5.7	3.4	6.0	6.1
Prop In Lane	0.37		0.63	1.00		0.89	1.00		0.18	1.00		0.66
Lane Grp Cap(c), veh/h	365	0	0	413	0	252	210	1236	651	196	1209	575
V/C Ratio(X)	0.26	0.00	0.00	0.11	0.00	0.21	0.79	0.49	0.49	0.78	0.52	0.53
Avail Cap(c_a), veh/h	1249	0	0	1226	0	1203	289	1717	905	328	1783	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	0.0	14.7	0.0	14.8	17.5	10.0	10.0	17.7	10.3	10.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.2	6.2	0.4	0.8	2.6	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.3	0.0	0.4	1.7	1.7	1.8	1.3	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	0.0	0.0	14.7	0.0	15.0	23.7	10.4	10.8	20.3	10.7	11.3
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		94			100			1095			1082	
Approach Delay, s/veh		15.3			14.9			12.5			12.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	20.4		11.6	9.3	20.0		11.6
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.4	7.7		4.1	5.7	8.1		3.2
Green Ext Time (p_c), s	0.0	6.2		0.3	0.0	5.9		0.3

Intersection Summary			
HCM 6th Ctrl Delay			12.6
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	39

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	340	580	910	630	20
Future Vol, veh/h	0	340	580	910	630	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	378	644	1011	700	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	381	732	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	525	~ 523	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	515	~ 518	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.9	58.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 518	-	515	-	-
HCM Lane V/C Ratio	1.244	-	0.734	-	-
HCM Control Delay (s)	150	-	28.9	-	-
HCM Lane LOS	F	-	D	-	-
HCM 95th %tile Q(veh)	25.3	-	6.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	120	0	1460	840	130
Future Vol, veh/h	0	120	0	1460	840	130
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	138	0	1678	966	149

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	578	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	457	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	448	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	448	-	-
HCM Lane V/C Ratio	-	0.308	-	-
HCM Control Delay (s)	-	16.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	20	30	20	30	10	420	1430	260	120	650	190
Future Volume (veh/h)	20	20	30	20	30	10	420	1430	260	120	650	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.70	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	22	22	33	22	33	11	467	1589	289	133	722	211
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	31	630	534	31	630	372	280	1279	530	143	780	228
Arrive On Green	0.02	0.34	0.34	0.02	0.34	0.34	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1096	1767	3526	1462	1767	2655	776
Grp Volume(v), veh/h	22	22	33	22	33	11	467	1589	289	133	479	454
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1096	1767	1763	1462	1767	1763	1669
Q Serve(g_s), s	1.5	0.9	1.7	1.5	1.4	0.8	18.6	42.6	18.4	8.8	31.0	31.0
Cycle Q Clear(g_c), s	1.5	0.9	1.7	1.5	1.4	0.8	18.6	42.6	18.4	8.8	31.0	31.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	31	630	534	31	630	372	280	1279	530	143	518	490
V/C Ratio(X)	0.71	0.03	0.06	0.71	0.05	0.03	1.67	1.24	0.54	0.93	0.93	0.93
Avail Cap(c_a), veh/h	77	630	534	87	632	374	280	1279	530	143	524	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	25.9	26.2	57.4	26.1	25.9	49.4	37.4	29.7	53.6	40.2	40.2
Incr Delay (d2), s/veh	10.8	0.0	0.0	10.8	0.0	0.0	315.8	115.9	1.4	53.8	23.6	24.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.6	0.7	0.6	0.2	32.7	38.5	6.6	6.0	16.6	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.1	25.9	26.2	68.1	26.1	25.9	365.2	153.3	31.1	107.4	63.8	64.8
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	E	E
Approach Vol, veh/h		77			66			2345			1066	
Approach Delay, s/veh		38.1			40.1			180.4			69.6	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.3	6.4	44.8	23.0	43.2	6.4	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.8	44.6	3.5	3.7	20.6	33.0	3.5	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	1.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	141.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	426.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1510	2080	2110	570	130
Future Vol, veh/h	0	1510	2080	2110	570	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1641	2261	2293	620	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	330	771	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 663	~ 833	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 650	~ 825	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 705.9	$ 396.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 825	-	650	-	-
HCM Lane V/C Ratio	2.74	-	2.525	-	-
HCM Control Delay (s)	$ 799.4	-	$ 705.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	184.1	-	128.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	150	430	300	10	390	110	270	5	50	10
Future Volume (veh/h)	5	80	150	430	300	10	390	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	195	558	390	13	506	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	221	415	398	716	24	410	90	222	85	634	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	551	1033	1057	1781	59	735	208	510	48	1459	276
Grp Volume(v), veh/h	6	0	299	558	0	403	1000	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1585	1057	0	1841	1453	0	0	1783	0	0
Q Serve(g_s), s	0.3	0.0	8.3	15.8	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	8.3	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.51		0.35	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	636	398	0	739	723	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.47	1.40	0.00	0.55	1.38	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	636	398	0	739	723	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.2	24.5	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.9	196.1	0.0	0.9	181.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8	27.1	0.0	3.8	45.7	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.1	220.6	0.0	14.6	199.7	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		305			961			1000			84	
Approach Delay, s/veh		14.2			134.3			199.7			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	29.0	31.0	29.0	31.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	24.1	26.1	24.1	26.1
Max Q Clear Time (g_c+I1), s	12.3	3.7	26.1	28.1
Green Ext Time (p_c), s	2.2	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	142.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	150	480	50	0	310	390
Future Volume (veh/h)	0	0	20	40	390	370	150	480	50	0	310	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	185	593	62	0	383	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	88	90	7	0	325	408
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	203	16	0	734	922
Grp Volume(v), veh/h	0	0	25	987	0	0	840	0	0	0	0	864
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	219	0	0	0	0	1657
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.22		0.07	0.00		0.56
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	185	0	0	0	0	732
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	4.54	0.00	0.00	0.00	0.00	1.18
Avail Cap(c_a), veh/h	0	0	569	676	0	0	185	0	0	0	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	14.1	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	1607.2	0.0	0.0	0.0	0.0	94.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	83.5	0.0	0.0	0.0	0.0	25.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	1621.3	0.0	0.0	0.0	0.0	108.7
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			840			864	
Approach Delay, s/veh		10.4			232.0			1621.3			108.7	
Approach LOS		B			F			F			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0		23.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		22.1		18.1		22.1		18.1				
Max Q Clear Time (g_c+I1), s		24.1		2.5		24.1		20.1				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			620.4									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	106.6
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	840	0	160	90	0
Future Vol, veh/h	450	840	0	160	90	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1000	0	190	107	0
Number of Lanes	1	1	0	1	1	0

Approach	EB			NB	SB
Opposing Approach				SB	NB
Opposing Lanes	0			1	1
Conflicting Approach Left	SB			EB	
Conflicting Lanes Left	1			2	0
Conflicting Approach Right	NB				EB
Conflicting Lanes Right	1			0	2
HCM Control Delay	125			12.1	10.8
HCM LOS	F			B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	450	840	90
LT Vol	0	450	0	0
Through Vol	160	0	0	90
RT Vol	0	0	840	0
Lane Flow Rate	190	536	1000	107
Geometry Grp	2	7	7	2
Degree of Util (X)	0.32	0.89	1.325	0.185
Departure Headway (Hd)	6.21	5.981	4.771	6.386
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	583	605	770	566
Service Time	4.21	3.706	2.496	4.386
HCM Lane V/C Ratio	0.326	0.886	1.299	0.189
HCM Control Delay	12.1	38.9	171.2	10.8
HCM Lane LOS	B	E	F	B
HCM 95th-tile Q	1.4	10.6	39.9	0.7

Intersection	
Intersection Delay, s/veh	28.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	640	20	50	5	90	5	120	5	5	5
Future Vol, veh/h	5	300	640	20	50	5	90	5	120	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	727	23	57	6	102	6	136	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	33.5	9.8	12.5	9.7
HCM LOS	D	A	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	42%	2%	0%	27%	33%
Vol Thru, %	2%	98%	0%	67%	33%
Vol Right, %	56%	0%	100%	7%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	305	640	75	15
LT Vol	90	5	0	20	5
Through Vol	5	300	0	50	5
RT Vol	120	0	640	5	5
Lane Flow Rate	244	347	727	85	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.388	0.521	0.95	0.139	0.031
Departure Headway (Hd)	5.717	5.416	4.702	5.879	6.451
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	623	662	764	614	558
Service Time	3.813	3.195	2.481	3.882	4.457
HCM Lane V/C Ratio	0.392	0.524	0.952	0.138	0.03
HCM Control Delay	12.5	14	42.8	9.8	9.7
HCM Lane LOS	B	B	E	A	A
HCM 95th-tile Q	1.8	3	14.2	0.5	0.1

Intersection	
Intersection Delay, s/veh	21.3
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	120	230	435
Future Vol, veh/h	95	100	80	120	230	435
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	125	240	453
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.7	11.1	27.5
HCM LOS	B	B	D

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	40%	100%	0%	0%
Vol Thru, %	60%	0%	0%	35%
Vol Right, %	0%	0%	100%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	200	95	100	665
LT Vol	80	95	0	0
Through Vol	120	0	0	230
RT Vol	0	0	100	435
Lane Flow Rate	208	99	104	693
Geometry Grp	2	7	7	2
Degree of Util (X)	0.319	0.197	0.172	0.852
Departure Headway (Hd)	5.505	7.164	5.942	4.429
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	654	504	606	804
Service Time	3.525	4.873	3.651	2.522
HCM Lane V/C Ratio	0.318	0.196	0.172	0.862
HCM Control Delay	11.1	11.6	9.9	27.5
HCM Lane LOS	B	B	A	D
HCM 95th-tile Q	1.4	0.7	0.6	10.2

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	120	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	0	120	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	0	135	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	8.6	8.3	11.6
HCM LOS	-	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	8%	9%
Vol Thru, %	100%	0%	100%	0%	91%
Vol Right, %	0%	100%	0%	92%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	130	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	0	300
RT Vol	0	40	0	120	0
Lane Flow Rate	90	45	0	146	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.13	0.056	0	0.185	0.47
Departure Headway (Hd)	5.195	4.49	5.322	4.571	4.566
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	689	796	0	784	790
Service Time	2.935	2.229	3.376	2.606	2.599
HCM Lane V/C Ratio	0.131	0.057	0	0.186	0.47
HCM Control Delay	8.7	7.5	8.4	8.6	11.6
HCM Lane LOS	A	A	N	A	B
HCM 95th-tile Q	0.4	0.2	0	0.7	2.5

Intersection	
Intersection Delay, s/veh	38.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	0
Future Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	167	188	156	0	0	0	94	63	167	333	177	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Righ	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	42.9	18.5	47.7
HCM LOS	E	C	E

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	33%	65%
Vol Thru, %	19%	37%	35%
Vol Right, %	52%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	490	490
LT Vol	90	160	320
Through Vol	60	180	170
RT Vol	160	150	0
Lane Flow Rate	323	510	510
Geometry Grp	1	1	1
Degree of Util (X)	0.586	0.902	0.925
Departure Headway (Hd)	6.536	6.363	6.524
Convergence, Y/N	Yes	Yes	Yes
Cap	549	567	556
Service Time	4.599	4.412	4.579
HCM Lane V/C Ratio	0.588	0.899	0.917
HCM Control Delay	18.5	42.9	47.7
HCM Lane LOS	C	E	E
HCM 95th-tile Q	3.7	10.8	11.4

29: Washington St & San Diego Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	810	0	0	880	680
Future Volume (veh/h)	0	0	0	200	370	80	300	810	0	0	880	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	853	0	0	926	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	853	0	0	926	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	16.7	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	16.7	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.36	0.00	0.00	0.59	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.78	0.78	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	17.8	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.6	0.3	0.0	0.0	1.7	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	6.7	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.3	0.0	0.0	19.4	74.2
LnGrp LOS				C	C	C	C	A	A	A	B	F
Approach Vol, veh/h					684			1169			1642	
Approach Delay, s/veh					31.5			6.9			43.3	
Approach LOS					C			A			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0				
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9				
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1				
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9				
Green Ext Time (p_c), s		9.1			0.0	0.0		2.4				

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

30: Washington St & Hancock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	510	160	460	620	0
Future Volume (veh/h)	600	380	240	0	0	0	0	510	160	460	620	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	526	165	474	639	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	526	165	474	639	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	11.5	7.8	11.3	9.4	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	11.5	7.8	11.3	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.46	0.33	0.85	0.37	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.96	0.96	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	18.3	17.2	34.2	7.9	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	1.3	1.7	6.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	3.8	2.3	5.1	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	19.6	18.9	40.5	8.4	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		1258						691			1113	
Approach Delay, s/veh		31.3						19.4			22.0	
Approach LOS		C						B			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1						
Max Q Clear Time (g_c+I1), s	13.3	13.5		18.6		11.4						
Green Ext Time (p_c), s	0.4	3.9		2.5		5.6						

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	470	0	0	720	140
Future Volume (veh/h)	30	0	70	60	50	170	140	470	0	0	720	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	490	0	0	750	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	288	177	1496	0	0	1027	444
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.36	0.36
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	490	0	0	750	146
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.7	0.0	0.0	15.7	5.9
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.7	0.0	0.0	15.7	5.9
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	288	177	1496	0	0	1027	444
V/C Ratio(X)	1.10	0.00	0.00	0.18	0.14	0.61	0.83	0.33	0.00	0.00	0.73	0.33
Avail Cap(c_a), veh/h	94	0	0	675	709	568	177	1891	0	0	1406	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	22.9	22.8	25.1	30.1	9.1	0.0	0.0	18.7	15.6
Incr Delay (d2), s/veh	123.7	0.0	0.0	0.1	0.1	0.8	26.9	0.0	0.0	0.0	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	0.8	0.7	2.5	3.6	1.8	0.0	0.0	4.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.7	0.0	0.0	23.0	22.8	25.9	57.0	9.1	0.0	0.0	20.2	16.2
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			636			896	
Approach Delay, s/veh		155.7			24.7			20.1			19.5	
Approach LOS		F			C			C			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		40.5		8.0	11.3	29.2		19.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0
Max Q Clear Time (g_c+I1), s		8.7		6.0	7.5	17.7		9.4
Green Ext Time (p_c), s		2.4		0.0	0.0	6.1		0.9

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	230	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	162	199	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	478	502	742				0	651	86	289	551	0
Arrive On Green	0.27	0.27	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	1767	1856	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	162	199	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	3.0	3.6	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	3.0	3.6	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	478	502	742				0	369	367	289	551	0
V/C Ratio(X)	0.34	0.40	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	1273	1337	1427				0	607	603	313	598	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.9	12.1	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.0				0.0	0.7	0.7	6.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.2	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	12.3	5.9				0.0	15.4	15.5	22.2	16.4	0.0
LnGrp LOS	B	B	A				A	B	B	C	B	A
Approach Vol, veh/h		450						478			489	
Approach Delay, s/veh		10.9						15.4			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.3		7.2
Max Q Clear Time (g_c+I1), s				7.1		5.6		6.3
Green Ext Time (p_c), s				1.1		1.1		0.3

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	140	250	390	100	80	400	140
Future Volume (veh/h)	90	200	100	410	700	140	250	390	100	80	400	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	161	287	448	115	92	460	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	552	550	191	535	107	131	887	218	111	828	276
Arrive On Green	0.06	0.36	0.36	0.13	0.43	0.43	0.07	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1767	1537	1531	1464	1238	248	1767	4001	983	1464	3704	1235
Grp Volume(v), veh/h	103	230	115	471	0	966	287	375	188	92	417	204
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1485	1767	1689	1607	1464	1689	1562
Q Serve(g_s), s	5.1	10.0	4.6	11.6	0.0	38.5	6.6	8.7	9.2	5.5	9.8	10.4
Cycle Q Clear(g_c), s	5.1	10.0	4.6	11.6	0.0	38.5	6.6	8.7	9.2	5.5	9.8	10.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.61	1.00		0.79
Lane Grp Cap(c), veh/h	101	552	550	191	0	642	131	749	356	111	755	349
V/C Ratio(X)	1.02	0.42	0.21	2.47	0.00	1.51	2.19	0.50	0.53	0.83	0.55	0.58
Avail Cap(c_a), veh/h	101	552	550	191	0	642	131	1110	528	133	1167	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	21.5	19.8	38.8	0.0	25.3	41.3	30.4	30.6	40.6	30.7	30.9
Incr Delay (d2), s/veh	94.6	0.2	0.1	677.7	0.0	235.4	561.0	1.0	2.3	25.5	1.1	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	3.5	1.6	40.0	0.0	54.6	23.2	3.6	3.7	2.7	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.6	21.7	19.9	716.5	0.0	260.7	602.2	31.3	32.8	66.1	31.8	33.6
LnGrp LOS	F	C	B	F	A	F	F	C	C	E	C	C
Approach Vol, veh/h		448			1437			850			713	
Approach Delay, s/veh		47.6			410.1			224.4			36.8	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	25.1	16.0	36.9	11.0	25.2	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	7.5	11.2	13.6	12.0	8.6	12.4	7.1	40.5
Green Ext Time (p_c), s	0.0	5.6	0.0	1.0	0.0	6.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	240.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	1140	100	80	1410	90	250	350	90	100	240	900
Future Volume (veh/h)	530	1140	100	80	1410	90	250	350	90	100	240	900
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	541	1163	102	82	1439	92	255	357	92	102	245	918
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1096	70	134	992	244	124	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3359	214	1767	4026	989	1767	5066	1520
Grp Volume(v), veh/h	541	626	639	82	752	779	255	297	152	102	245	918
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1810	1767	1689	1638	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.2	10.8	8.0	5.4	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.2	10.8	8.0	5.4	33.7
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	591	134	832	403	124	1219	710
V/C Ratio(X)	1.40	0.73	0.73	0.80	1.31	1.32	1.91	0.36	0.38	0.82	0.20	1.29
Avail Cap(c_a), veh/h	386	859	875	121	575	591	134	832	403	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	43.6	43.8	64.2	42.4	38.1
Incr Delay (d2), s/veh	195.3	3.5	3.5	23.2	150.6	154.8	434.2	1.2	2.7	14.5	0.4	142.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.5	17.4	17.8	3.6	44.0	45.8	20.9	4.4	4.7	4.1	2.3	51.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	250.0	32.0	32.0	88.4	197.7	202.0	498.9	44.8	46.5	78.7	42.8	180.6
LnGrp LOS	F	C	C	F	F	F	F	D	D	E	D	F
Approach Vol, veh/h		1806			1613			704			1265	
Approach Delay, s/veh		97.3			194.2			209.6			145.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	39.8	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.0	12.8	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.3	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1400	2530	2930	80	60	100
Future Volume (veh/h)	1400	2530	2930	80	60	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1505	2720	3151	0	65	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4179	2758		152	135
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1505	2720	3151	0	65	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	4.1	8.0
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	4.1	8.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4179	2758		152	135
V/C Ratio(X)	1.80	0.65	1.14		0.43	0.80
Avail Cap(c_a), veh/h	834	4179	2758		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.2	52.9
Incr Delay (d2), s/veh	367.0	0.8	69.0	0.0	0.7	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	54.6	5.9	41.9	0.0	1.9	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	411.6	4.7	95.9	0.0	51.9	56.9
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4225	3151	A	173	
Approach Delay, s/veh		149.7	95.9		55.0	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		10.0	30.7	66.2
Green Ext Time (p_c), s		51.1		0.2	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			125.1
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	70	120	110	150	120	260	1180	80	190	790	240
Future Volume (veh/h)	90	70	120	110	150	120	260	1180	80	190	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.92	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	73	125	115	156	125	271	1229	83	198	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	168	132	130	209	163	1348	1241	84	540	1001	511
Arrive On Green	0.04	0.09	0.09	0.07	0.11	0.11	0.39	0.37	0.37	0.61	0.57	0.57
Sat Flow, veh/h	3428	1856	1456	1767	1856	1450	3428	3346	226	1767	3526	1569
Grp Volume(v), veh/h	94	73	125	115	156	125	271	647	665	198	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1456	1767	1856	1450	1714	1763	1809	1767	1763	1569
Q Serve(g_s), s	3.2	4.5	4.9	7.7	9.8	10.0	6.2	43.7	43.9	6.7	22.7	4.7
Cycle Q Clear(g_c), s	3.2	4.5	4.9	7.7	9.8	10.0	6.2	43.7	43.9	6.7	22.7	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	144	168	132	130	209	163	1348	654	671	540	1001	511
V/C Ratio(X)	0.65	0.44	0.95	0.89	0.75	0.77	0.20	0.99	0.99	0.37	0.82	0.49
Avail Cap(c_a), veh/h	240	481	377	130	481	376	1348	654	671	540	1334	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.22	0.22	0.22
Uniform Delay (d), s/veh	56.6	51.7	12.5	55.1	51.6	51.7	24.0	37.5	37.6	17.5	23.5	18.3
Incr Delay (d2), s/veh	1.9	1.8	25.9	45.7	2.0	2.8	0.0	32.6	32.9	0.0	1.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.2	4.4	5.0	4.5	3.7	2.5	23.9	24.7	2.3	6.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	53.4	38.5	100.8	53.6	54.5	24.0	70.1	70.4	17.6	25.3	19.0
LnGrp LOS	E	D	D	F	D	D	C	E	E	B	C	B
Approach Vol, veh/h		292			396			1583			1271	
Approach Delay, s/veh		48.7			67.6			62.4			22.9	
Approach LOS		D			E			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	49.8	13.2	15.9	51.6	39.3	10.1	19.0
Change Period (Y+Rc), s	4.4	5.3	4.4	5.1	4.4	5.2	5.1	* 5.5
Max Green Setting (Gmax), s	16.4	44.5	8.8	31.1	15.6	45.4	8.4	* 31
Max Q Clear Time (g_c+I1), s	13.7	45.9	9.7	6.9	8.2	24.7	5.2	12.0
Green Ext Time (p_c), s	0.2	0.0	0.0	0.8	0.3	9.3	0.0	0.6

Intersection Summary			
HCM 6th Ctrl Delay			47.6
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1290	100	370	410	0	0	0	0	190	0	810
Future Volume (veh/h)	0	1290	100	370	410	0	0	0	0	190	0	810
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1402	109	402	446	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1402	109	402	446	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	27.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.61	0.11	1.19	0.16	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.65	0.65	0.70	0.70	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.9	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.1	105.6	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.8	1.0	9.4	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.7	7.9	153.8	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1511			848						207	A
Approach Delay, s/veh		12.3			73.0						55.5	
Approach LOS		B			E						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5						
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0						
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0						
Max Q Clear Time (g_c+I1), s	13.8	29.4		15.8		2.0						
Green Ext Time (p_c), s	0.0	5.8		0.1		2.0						
Intersection Summary												
HCM 6th Ctrl Delay			35.9									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	930	550	0	0	480	310	300	10	440	0	0	0
Future Volume (veh/h)	930	550	0	0	480	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	969	573	0	0	500	323	312	10	412			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1213	2365	0	0	547	352	420	13	385			
Arrive On Green	0.59	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2109	1298	1715	55	1572			
Grp Volume(v), veh/h	969	573	0	0	437	386	322	0	412			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1552	1770	0	1572			
Q Serve(g_s), s	26.3	0.0	0.0	0.0	28.8	29.0	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	26.3	0.0	0.0	0.0	28.8	29.0	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.84	0.97		1.00			
Lane Grp Cap(c), veh/h	1213	2365	0	0	478	421	434	0	385			
V/C Ratio(X)	0.80	0.24	0.00	0.00	0.91	0.92	0.74	0.00	1.07			
Avail Cap(c_a), veh/h	1213	2365	0	0	521	459	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.3	0.0	0.0	0.0	42.4	42.4	41.8	0.0	45.3			
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	24.5	27.3	6.0	0.0	65.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	0.0	15.6	14.1	9.5	0.0	29.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	0.0	0.0	66.8	69.8	47.8	0.0	110.8			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1542			823			734				
Approach Delay, s/veh		13.6			68.2			83.2				
Approach LOS		B			E			F				
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		86.0		34.0	47.9	38.1						
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5						
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36						
Max Q Clear Time (g_c+I1), s		2.0		31.4	28.3	31.0						
Green Ext Time (p_c), s		2.7		0.0	3.3	1.6						
Intersection Summary												
HCM 6th Ctrl Delay			44.6									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	730	10	1090	1010	0	400
Future Volume (veh/h)	730	10	1090	1010	0	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	795	0	1172	0	0	430
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1009	460	1513		0	1513
Arrive On Green	0.29	0.00	0.43	0.00	0.00	0.43
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	795	0	1172	0	0	430
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	10.3	0.0	14.1	0.0	0.0	3.9
Cycle Q Clear(g_c), s	10.3	0.0	14.1	0.0	0.0	3.9
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1009	460	1513		0	1513
V/C Ratio(X)	0.79	0.00	0.77		0.00	0.28
Avail Cap(c_a), veh/h	1229	560	1665		0	1680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	12.1	0.0	0.0	9.2
Incr Delay (d2), s/veh	3.1	0.0	2.3	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	4.9	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.5	0.0	14.5	0.0	0.0	9.4
LnGrp LOS	B	A	B		A	A
Approach Vol, veh/h	795		1172	A		430
Approach Delay, s/veh	19.5		14.5			9.4
Approach LOS	B		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	26.8	26.8	22.9
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	23.5	* 24	17.3
Max Q Clear Time (g_c+I1), s	16.1	5.9	12.3
Green Ext Time (p_c), s	5.2	4.2	1.9

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

1: Taylor St/Hotel Circle S

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	610
Future Volume (vph)	290	560	120	90	270	610
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	678

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	678
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	678
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.60
Capacity (veh/h)	552	608	598	547	1118
Control Delay (s)	16.9	68.7	12.4	16.8	10.9
Approach Delay (s)	51.0		12.4	12.7	
Approach LOS	F		B	B	

Intersection Summary			
Delay	29.4		
Level of Service	D		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

2: Taylor St & I-8 EB Ramps

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	740	560	470	260	290	40
Future Volume (veh/h)	740	560	470	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	796	602	505	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	828	1347	724		411	925
Arrive On Green	0.47	0.73	0.21	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	796	602	505	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	35.3	10.7	10.8	0.0	7.1	0.9
Cycle Q Clear(g_c), s	35.3	10.7	10.8	0.0	7.1	0.9
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	828	1347	724		411	925
V/C Ratio(X)	0.96	0.45	0.70		0.76	0.05
Avail Cap(c_a), veh/h	890	1730	1328		931	1164
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	4.5	29.9	0.0	34.5	7.0
Incr Delay (d2), s/veh	20.1	0.1	0.5	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	3.0	4.5	0.0	3.0	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.9	4.6	30.3	0.0	35.6	7.1
LnGrp LOS	D	A	C		D	A
Approach Vol, veh/h		1398	505	A	355	
Approach Delay, s/veh		25.3	30.3		32.2	
Approach LOS		C	C		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		64.8		16.2	42.2	22.6
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		12.7		9.1	37.3	12.8
Green Ext Time (p_c), s		2.8		0.6	0.7	2.1

Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050A PM | Old Town Complex
3: Taylor St & Morena Blvd/Whitman St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	440	0	0	20	650	990	5	10	370	100
Future Volume (veh/h)	330	30	440	0	0	20	650	990	5	10	370	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	489				722	1100	6	11	411	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	792	0	965				1378	2168	12	19	559	149
Arrive On Green	0.22	0.00	0.22				0.80	1.00	1.00	0.01	0.21	0.21
Sat Flow, veh/h	3534	0	1485				3428	3594	20	1767	2711	722
Grp Volume(v), veh/h	391	0	489				722	539	567	11	265	257
Grp Sat Flow(s),veh/h/ln	1767	0	1485				1714	1763	1851	1767	1763	1670
Q Serve(g_s), s	8.7	0.0	0.0				6.4	0.0	0.0	0.6	12.7	13.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0				6.4	0.0	0.0	0.6	12.7	13.0
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.43
Lane Grp Cap(c), veh/h	792	0	965				1378	1063	1116	19	364	344
V/C Ratio(X)	0.49	0.00	0.51				0.52	0.51	0.51	0.58	0.73	0.75
Avail Cap(c_a), veh/h	1178	0	1127				1378	1063	1116	100	460	436
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.40	0.40	0.40	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	9.1				5.9	0.0	0.0	44.3	33.4	33.5
Incr Delay (d2), s/veh	0.8	0.0	0.7				0.1	0.7	0.7	10.1	12.1	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	12.4				1.5	0.2	0.2	0.3	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	9.8				6.0	0.7	0.7	54.4	45.5	47.2
LnGrp LOS	C	A	A				A	A	A	D	D	D
Approach Vol, veh/h		880						1828			533	
Approach Delay, s/veh		19.3						2.8			46.5	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.4	59.2		25.5	41.1	23.5
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.7	8.4	15.0
Green Ext Time (p_c), s	0.0	10.6		6.1	1.4	2.6

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A PM | Old Town Complex
4: Taylor St & Juan St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	90	10	310	10	1300	110	270	550	20
Future Volume (veh/h)	20	10	10	90	10	310	10	1300	110	270	550	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	94	10	323	10	1354	115	281	573	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	184	87	68	133	28	348	17	1467	125	385	1815	66
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.01	0.31	0.31	0.22	0.52	0.52
Sat Flow, veh/h	401	282	220	274	90	1129	1767	4725	401	1767	3462	127
Grp Volume(v), veh/h	41	0	0	427	0	0	10	968	501	281	291	303
Grp Sat Flow(s),veh/h/ln	903	0	0	1493	0	0	1767	1689	1749	1767	1763	1826
Q Serve(g_s), s	0.0	0.0	0.0	20.6	0.0	0.0	0.5	24.9	24.9	13.3	8.5	8.5
Cycle Q Clear(g_c), s	1.5	0.0	0.0	24.9	0.0	0.0	0.5	24.9	24.9	13.3	8.5	8.5
Prop In Lane	0.51		0.24	0.22		0.76	1.00		0.23	1.00		0.07
Lane Grp Cap(c), veh/h	339	0	0	509	0	0	17	1049	543	385	924	957
V/C Ratio(X)	0.12	0.00	0.00	0.84	0.00	0.00	0.58	0.92	0.92	0.73	0.32	0.32
Avail Cap(c_a), veh/h	372	0	0	548	0	0	102	1054	546	385	924	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.52	0.52	0.52	0.85	0.85	0.85
Uniform Delay (d), s/veh	22.1	0.0	0.0	30.0	0.0	0.0	44.4	30.0	30.0	32.7	12.2	12.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	9.7	0.0	0.0	5.7	8.6	14.5	5.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	10.0	0.0	0.0	0.2	11.0	12.3	6.1	3.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	0.0	39.8	0.0	0.0	50.1	38.5	44.5	37.9	13.0	12.9
LnGrp LOS	C	A	A	D	A	A	D	D	D	D	B	B
Approach Vol, veh/h		41			427			1479			875	
Approach Delay, s/veh		22.1			39.8			40.6			21.0	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.5	32.8		32.6	5.3	52.1		32.6
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.3	26.9		3.5	2.5	10.5		26.9
Green Ext Time (p_c), s	0.1	1.0		0.1	0.0	5.3		0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1090	190	200	500	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1090	190	200	500	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1135	198	208	521	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1342	234	164	1581	0	470	0	412	0	497	0
Arrive On Green	0.00	0.40	0.40	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3452	579	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	909	424	208	521	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1240	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	18.7	18.7	5.6	6.0	0.0	9.4	0.0	12.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.7	18.7	5.6	6.0	0.0	9.4	0.0	12.7	0.0	0.0	0.0
Prop In Lane	0.00		0.47	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1074	501	164	1581	0	470	0	412	0	497	0
V/C Ratio(X)	0.00	0.85	0.85	1.27	0.33	0.00	0.49	0.00	0.83	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1105	515	164	1613	0	772	0	767	0	953	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.3	16.3	27.4	6.9	0.0	19.6	0.0	20.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.1	12.1	160.3	0.0	0.0	0.3	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	6.3	9.5	1.4	0.0	2.6	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.4	28.4	187.7	6.9	0.0	19.9	0.0	22.6	0.0	0.0	0.0
LnGrp LOS	A	C	C	F	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1333			729			573			0	
Approach Delay, s/veh		24.3			58.5			21.5			0.0	
Approach LOS		C			E			C				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	29.3		21.1		39.3		21.1
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	7.6	20.7		0.0		8.0		14.7
Green Ext Time (p_c), s	0.0	3.1		0.0		2.4		1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	640	190	330	390	100	260	410	600	200	360	200
Future Volume (veh/h)	140	640	190	330	390	100	260	410	600	200	360	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	149	681	202	351	415	106	277	436	638	213	383	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	149	681	202	351	415	106	277	436	638	213	383	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	10.8	30.4	16.1	16.8	34.9	9.1	14.8	13.1	36.8	16.0	11.2	16.1
Cycle Q Clear(g_c), s	10.8	30.4	16.1	16.8	34.9	9.1	14.8	13.1	36.8	16.0	11.2	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	0.93	0.88	0.40	0.97	0.89	0.29	1.37	0.44	1.30	1.24	0.37	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	44.7	28.8	55.9	41.8	33.0	57.3	37.9	38.2	56.7	36.3	38.0
Incr Delay (d2), s/veh	48.7	11.6	0.6	40.0	17.5	0.2	195.3	0.3	149.8	147.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	11.7	4.7	7.7	14.8	2.5	17.6	5.7	35.7	12.5	4.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.1	56.4	29.4	95.8	59.2	33.2	252.6	38.2	187.9	203.9	36.3	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1032			872			1351			809	
Approach Delay, s/veh		58.4			70.8			152.9			81.0	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	18.8	32.4	16.8	18.1	12.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	1.8	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	97.0
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	70.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	940	610	290
Future Vol, veh/h	120	70	200	940	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1011	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1768	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 82	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	357	691	-	-	-
Mov Cap-2 Maneuver	~ 55	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 816.6	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	80	-	-
HCM Lane V/C Ratio	0.311	-	2.554	-	-
HCM Control Delay (s)	12.5	-	$ 816.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	420	370	2340	0	0	2490	470
Future Volume (veh/h)	0	0	0	140	660	420	370	2340	0	0	2490	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	506	446	2819	0	0	3000	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	499	332	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				381	1813	1206	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				814	0	656	446	2819	0	0	3000	566
Grp Sat Flow(s),veh/h/ln				1836	0	1564	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.21		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	430	150	3362	0	0	2792	836
V/C Ratio(X)				1.61	0.00	1.53	2.97	0.84	0.00	0.00	1.07	0.68
Avail Cap(c_a), veh/h				505	0	430	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.20	0.20	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				284.4	0.0	247.9	889.7	0.6	0.0	0.0	41.0	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				60.3	0.0	47.0	42.7	0.2	0.0	0.0	45.5	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				342.4	0.0	305.9	956.1	0.6	0.0	0.0	76.9	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1470			3265			3566	
Approach Delay, s/veh					326.1			131.1			69.5	
Approach LOS					F			F			E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	111.1	48.9	18.0	93.1
Change Period (Y+Rc), s	4.9	4.9	4.4	4.9
Max Green Setting (Gmax), s	106.2	44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s	2.0	46.0	15.6	90.2
Green Ext Time (p_c), s	18.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	139.2
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2280	40	280	2230	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2280	40	280	2230	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2351	41	289	2299	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2623	46	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5292	89	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1547	845	289	2299	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1837	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	66.0	66.5	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	66.0	66.5	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	940	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.89	0.90	1.56	0.56	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	940	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	35.2	35.3	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	0.8	1.5	253.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	26.7	29.5	19.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	36.0	36.8	316.5	0.0	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2392			2588	
Approach Delay, s/veh		91.1						36.2			35.4	
Approach LOS		F						D			D	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	68.5	49.1	2.0
Green Ext Time (p_c), s	0.0	6.4	0.0	10.6

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	460	30	380	0	290	0	860	310	120	670	0
Future Volume (veh/h)	210	460	30	380	0	290	0	860	310	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	484	32	400	0	305	0	905	326	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	386	26	0	0	0	0	1581	565	305	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1709	113		0		0	2526	869	1767	3618	0
Grp Volume(v), veh/h	221	0	516		0.0		0	654	577	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1822				0	1763	1539	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	33.0	33.6	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	33.0	33.6	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	1000	305	2514	0
V/C Ratio(X)	0.55	0.00	1.25				0.00	0.57	0.58	0.41	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	1000	321	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	15.6	15.7	13.4	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	116.6				0.0	0.2	0.2	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	30.1				0.0	13.2	11.8	1.5	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	178.6				0.0	15.8	15.9	13.7	8.5	0.0
LnGrp LOS	D	A	F				A	B	B	B	A	A
Approach Vol, veh/h		737						1231			831	
Approach Delay, s/veh		141.5						15.8			9.3	
Approach LOS		F						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	15.7	35.6	38.1	13.5
Green Ext Time (p_c), s	0.0	24.0	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	530	230	380	530	30	280	1750	510	0	1690	770
Future Volume (veh/h)	570	530	230	380	530	30	280	1750	510	0	1690	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	668	509	250	341	677	33	304	1902	554	0	1837	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	299	594	29	315	1910	527	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3505	171	3428	3913	1081	0	5233	1572
Grp Volume(v), veh/h	668	509	250	341	358	352	304	1627	829	0	1837	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1820	1714	1689	1616	0	1689	1572
Q Serve(g_s), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	50.5	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	50.5	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.67	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
V/C Ratio(X)	0.82	1.18	0.72	1.14	1.14	1.14	0.97	0.99	1.05	0.00	1.00	
Avail Cap(c_a), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	0.27	0.27	0.27	0.00	0.80	0.00
Uniform Delay (d), s/veh	58.2	61.5	56.7	75.5	75.5	75.5	65.0	1.6	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	6.0	103.8	6.4	86.8	86.1	87.0	18.4	8.9	31.8	0.0	18.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	29.9	10.0	20.2	21.2	20.8	6.4	2.8	7.7	0.0	27.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	165.3	63.2	162.3	161.6	162.6	83.4	10.5	33.7	0.0	69.9	0.0
LnGrp LOS	E	F	E	F	F	F	F	B	F	A	F	
Approach Vol, veh/h		1427			1051			2760			1837	A
Approach Delay, s/veh		100.1			162.2			25.5			69.9	
Approach LOS		F			F			C			E	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.1	60.0		29.1
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		72.4
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	490	190	180	690	310	260	1710	130	420	1270	160
Future Volume (veh/h)	370	490	190	180	690	310	260	1710	130	420	1270	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	394	521	202	191	734	330	277	1819	138	447	1351	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	602	257	277	734	311	317	1912	145	501	2070	260
Arrive On Green	0.12	0.17	0.17	0.16	0.21	0.21	0.09	0.40	0.40	0.29	0.91	0.91
Sat Flow, veh/h	3428	3526	1505	1767	3526	1493	3428	4794	362	3428	4542	572
Grp Volume(v), veh/h	394	521	202	191	734	330	277	1280	677	447	1004	517
Grp Sat Flow(s),veh/h/ln	1714	1763	1505	1767	1763	1493	1714	1689	1779	1714	1689	1737
Q Serve(g_s), s	18.2	23.0	16.8	16.3	33.3	24.4	12.8	58.7	59.1	20.0	10.4	10.4
Cycle Q Clear(g_c), s	18.2	23.0	16.8	16.3	33.3	24.4	12.8	58.7	59.1	20.0	10.4	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.33
Lane Grp Cap(c), veh/h	420	602	257	277	734	311	317	1347	710	501	1539	791
V/C Ratio(X)	0.94	0.87	0.79	0.69	1.00	1.06	0.87	0.95	0.95	0.89	0.65	0.65
Avail Cap(c_a), veh/h	420	729	311	277	734	311	334	1391	733	501	1539	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.58	0.58	0.58	0.12	0.12	0.12
Uniform Delay (d), s/veh	69.6	64.6	42.6	63.8	63.4	33.9	71.7	46.5	46.7	55.4	4.3	4.3
Incr Delay (d2), s/veh	28.5	8.1	8.4	5.9	33.3	68.3	12.8	10.1	16.9	2.7	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	11.1	7.0	7.9	18.4	14.9	6.2	26.2	29.1	7.8	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.1	72.6	51.0	69.7	96.7	102.3	84.5	56.7	63.6	58.1	4.6	4.8
LnGrp LOS	F	E	D	E	F	F	F	E	E	E	A	A
Approach Vol, veh/h		1117			1255			2234			1968	
Approach Delay, s/veh		77.7			94.0			62.2			16.8	
Approach LOS		E			F			E			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.1	68.7	30.0	32.2	19.2	78.6	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	22.0	61.1	18.3	25.0	14.8	12.4	20.2	35.3
Green Ext Time (p_c), s	0.0	2.7	0.0	1.1	0.0	4.4	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			57.3
HCM 6th LOS			E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	290	20	490	380	120	30	1570	660	160	1240	350
Future Volume (veh/h)	240	290	20	490	380	120	30	1570	660	160	1240	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	250	302	21	510	396	125	31	1635	688	167	1292	365
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	269	378	26	551	419	343	41	2209	669	210	1670	717
Arrive On Green	0.15	0.22	0.22	0.16	0.23	0.23	0.02	0.44	0.44	0.02	0.16	0.16
Sat Flow, veh/h	1767	1710	119	3428	1856	1518	1767	5066	1535	3428	3526	1513
Grp Volume(v), veh/h	250	0	323	510	396	125	31	1635	688	167	1292	365
Grp Sat Flow(s),veh/h/ln	1767	0	1829	1714	1856	1518	1767	1689	1535	1714	1763	1513
Q Serve(g_s), s	22.3	0.0	26.7	23.5	33.6	9.4	2.8	43.0	69.8	7.8	56.3	20.7
Cycle Q Clear(g_c), s	22.3	0.0	26.7	23.5	33.6	9.4	2.8	43.0	69.8	7.8	56.3	20.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	404	551	419	343	41	2209	669	210	1670	717
V/C Ratio(X)	0.93	0.00	0.80	0.93	0.94	0.36	0.75	0.74	1.03	0.80	0.77	0.51
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2209	669	249	1670	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	66.9	0.0	59.0	66.2	60.9	37.4	77.7	37.6	45.1	77.4	59.3	17.2
Incr Delay (d2), s/veh	28.3	0.0	8.1	10.7	17.7	0.1	9.9	2.3	42.1	8.6	2.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	13.4	11.1	17.9	3.6	1.4	18.1	34.1	3.8	27.4	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.2	0.0	67.1	76.9	78.6	37.5	87.6	39.8	87.2	86.0	61.8	19.0
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	B
Approach Vol, veh/h		573			1031			2354			1824	
Approach Delay, s/veh		79.4			72.8			54.3			55.4	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	75.5	30.1	40.2	8.1	81.5	29.3	41.1
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.8	71.8	25.5	28.7	4.8	58.3	24.3	35.6
Green Ext Time (p_c), s	0.0	0.0	0.3	0.5	0.0	2.7	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	950	190	450	880	140	450
Future Volume (veh/h)	950	190	450	880	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1044	209	495	967	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	975	194	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	2995	579	1767	3618	373	1199
Grp Volume(v), veh/h	632	621	495	967	650	0
Grp Sat Flow(s),veh/h/ln	1763	1719	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	16.0	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	16.0	32.1	0.0
Prop In Lane		0.34	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	577	432	2173	457	0
V/C Ratio(X)	1.07	1.08	1.15	0.45	1.42	0.00
Avail Cap(c_a), veh/h	592	577	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.2	39.2	0.0
Incr Delay (d2), s/veh	56.7	59.3	89.8	0.1	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.9	24.7	22.4	6.0	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	93.4	96.0	131.6	11.4	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1253			1462	650	
Approach Delay, s/veh	94.7			52.1	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	42.5				73.5		37.0
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	27.0	* 37				67.6		32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1				18.0		34.1
Green Ext Time (p_c), s	0.0	0.0				8.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	104.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	310	870	30	0	1010
Future Vol, veh/h	0	310	870	30	0	1010
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	320	897	31	0	1041

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	484	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	526	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	516	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	516	-
HCM Lane V/C Ratio	-	-	0.619	-
HCM Control Delay (s)	-	-	22.7	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.2	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1300	1340	900	910	100
Future Volume (veh/h)	0	1300	1340	900	910	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1340	1381	928	938	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1653	1653	1229	1133	
Arrive On Green	0.00	0.47	0.47	0.47	0.33	0.00
Sat Flow, veh/h	0	3711	3618	1512	3428	1572
Grp Volume(v), veh/h	0	1340	1381	928	938	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1512	1714	1572
Q Serve(g_s), s	0.0	17.2	18.1	16.8	13.3	0.0
Cycle Q Clear(g_c), s	0.0	17.2	18.1	16.8	13.3	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1653	1653	1229	1133	
V/C Ratio(X)	0.00	0.81	0.84	0.76	0.83	
Avail Cap(c_a), veh/h	0	1695	1695	1247	1558	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.0	12.2	2.8	16.3	0.0
Incr Delay (d2), s/veh	0.0	3.0	3.7	2.6	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	6.4	11.8	4.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	15.0	16.0	5.4	18.8	0.0
LnGrp LOS	A	B	B	A	B	
Approach Vol, veh/h		1340	2309		938	A
Approach Delay, s/veh		15.0	11.7		18.8	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.2		22.6		30.2
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		19.2		15.3		20.1
Green Ext Time (p_c), s		4.3		2.1		4.7

Intersection Summary		
HCM 6th Ctrl Delay		14.1
HCM 6th LOS		B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣		↰	↱		↰	↑↑↱		↰	↑↑↱	
Traffic Volume (veh/h)	80	0	100	90	5	60	90	960	30	50	710	110
Future Volume (veh/h)	80	0	100	90	5	60	90	960	30	50	710	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	102	6	68	102	1091	34	57	807	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	236	36	194	481	30	337	129	1933	60	81	1567	241
Arrive On Green	0.24	0.00	0.24	0.24	0.24	0.24	0.07	0.38	0.38	0.05	0.36	0.36
Sat Flow, veh/h	498	152	814	1258	125	1417	1767	5039	157	1767	4399	676
Grp Volume(v), veh/h	205	0	0	102	0	74	102	731	394	57	618	314
Grp Sat Flow(s),veh/h/ln	1464	0	0	1258	0	1542	1767	1689	1819	1767	1689	1697
Q Serve(g_s), s	3.1	0.0	0.0	0.0	0.0	1.7	2.5	7.5	7.5	1.4	6.4	6.5
Cycle Q Clear(g_c), s	5.3	0.0	0.0	2.6	0.0	1.7	2.5	7.5	7.5	1.4	6.4	6.5
Prop In Lane	0.44		0.56	1.00		0.92	1.00		0.09	1.00		0.40
Lane Grp Cap(c), veh/h	466	0	0	481	0	367	129	1296	698	81	1203	605
V/C Ratio(X)	0.44	0.00	0.00	0.21	0.00	0.20	0.79	0.56	0.56	0.71	0.51	0.52
Avail Cap(c_a), veh/h	1157	0	0	1096	0	1121	216	1651	889	268	1743	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	13.8	0.0	13.5	20.1	10.7	10.7	20.8	11.2	11.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	4.0	0.5	1.0	4.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.7	0.0	0.5	1.1	2.3	2.5	0.6	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.0	0.0	13.9	0.0	13.6	24.2	11.2	11.7	25.0	11.6	12.0
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		205			176			1227			989	
Approach Delay, s/veh		15.0			13.8			12.4			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	22.3		15.4	7.6	21.1		15.4
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.4	9.5		7.3	4.5	8.5		4.6
Green Ext Time (p_c), s	0.0	7.0		0.9	0.0	6.1		0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	90.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱	↰	↑↑↑	↑↑↱	
Traffic Vol, veh/h	0	640	440	840	910	30
Future Vol, veh/h	0	640	440	840	910	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	674	463	884	958	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	515	1000	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 430	~ 388	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 422	~ 384	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 303.1	50.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 384	-	422	-	-
HCM Lane V/C Ratio	1.206	-	1.596	-	-
HCM Control Delay (s)	145.8	-	$ 303.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	19	-	38.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	71.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	560	0	1270	1460	100
Future Vol, veh/h	0	560	0	1270	1460	100
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	577	0	1309	1505	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	825	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 314	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 308	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 433.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	308	-	-
HCM Lane V/C Ratio	-	1.874	-	-
HCM Control Delay (s)	-	$ 433.8	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	39.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	20	120	150	60	110	280	980	20	20	1890	110
Future Volume (veh/h)	180	20	120	150	60	110	280	980	20	20	1890	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	200	22	133	167	67	122	311	1089	22	22	2100	122
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1629	699	29	1250	72
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.02	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3379	194
Grp Volume(v), veh/h	200	22	133	167	67	122	311	1089	22	22	1083	1139
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1810
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	33.6	1.1	1.7	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	33.6	1.1	1.7	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1629	699	29	652	670
V/C Ratio(X)	1.49	0.05	0.34	0.87	0.13	0.34	1.52	0.67	0.03	0.76	1.66	1.70
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1629	699	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	29.3	20.5	68.6	44.1	44.1
Incr Delay (d2), s/veh	257.7	0.0	0.2	14.2	0.0	0.2	257.7	1.1	0.0	13.8	303.6	321.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	0.6	3.9	6.6	1.8	3.4	21.9	14.5	0.4	0.9	77.4	82.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	322.4	40.3	43.6	75.7	37.8	40.5	319.6	30.4	20.6	82.4	347.7	365.9
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	F	F
Approach Vol, veh/h		355			356			1422			2244	
Approach Delay, s/veh		200.5			56.5			93.5			354.3	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	73.4	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	3.7	35.6	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	10.8	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		232.9
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2793.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2290	1930	1280	1970	190
Future Vol, veh/h	0	2290	1930	1280	1970	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2544	2144	1422	2189	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1115	2410	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 201	~ 192	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 197	~ 190	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 5405.2	$ 2810	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 190	-	197	-	-
HCM Lane V/C Ratio	11.287	-	12.916	-	-
HCM Control Delay (s)	$ 4673.6	-	$ 5405.2	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	247.6	-	296.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	280	230	350	10	490	60	270	10	130	50
Future Volume (veh/h)	10	150	280	230	350	10	490	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	295	242	368	11	516	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	194	361	203	629	19	490	48	217	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	551	1028	920	1789	53	813	99	447	33	1267	465
Grp Volume(v), veh/h	11	0	453	242	0	379	863	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1579	920	0	1843	1360	0	0	1765	0	0
Q Serve(g_s), s	0.6	0.0	15.7	5.4	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	15.7	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.60		0.33	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
V/C Ratio(X)	0.04	0.00	0.82	1.19	0.00	0.58	1.14	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	17.7	28.9	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	9.8	123.6	0.0	1.4	79.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.5	9.8	0.0	4.0	26.3	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	27.5	152.4	0.0	17.3	96.4	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		464			621			863			201	
Approach Delay, s/veh		27.3			70.0			96.4			9.0	
Approach LOS		C			E			F			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.0	34.0	26.0	34.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.1	29.1	21.1	29.1
Max Q Clear Time (g_c+I1), s	17.7	6.0	23.1	31.1
Green Ext Time (p_c), s	1.4	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	540	530	50	0	510	280
Future Volume (veh/h)	5	10	30	80	190	310	540	530	50	0	510	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	587	576	54	0	554	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1059	99	0	358	197
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1665	156	0	1116	612
Grp Volume(v), veh/h	49	0	0	631	0	0	587	0	630	0	0	858
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1821	0	0	1728
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.09	0.00		0.35
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	1.28	0.00	0.54	0.00	0.00	1.55
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.1	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	140.9	0.0	0.3	0.0	0.0	254.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	26.4	0.0	5.1	0.0	0.0	49.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	170.5	0.0	8.4	0.0	0.0	281.7
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1217			858	
Approach Delay, s/veh		23.8			251.2			86.6			281.7	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3
Max Q Clear Time (g_c+I1), s		17.4		3.9	22.8	27.7		21.3
Green Ext Time (p_c), s		3.0		0.1	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		183.9
HCM 6th LOS		F

Intersection	
Intersection Delay, s/veh	97.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	350	0	590	260	0
Future Vol, veh/h	530	350	0	590	260	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	389	0	656	289	0
Number of Lanes	1	1	0	1	1	0

Approach	EB		NB	SB
Opposing Approach			SB	NB
Opposing Lanes	0		1	1
Conflicting Approach Left	SB		EB	
Conflicting Lanes Left	1		2	0
Conflicting Approach Right	NB			EB
Conflicting Lanes Right	1		0	2
HCM Control Delay	101.8		125.3	20.1
HCM LOS	F		F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	590	530	350	260
LT Vol	0	530	0	0
Through Vol	590	0	0	260
RT Vol	0	0	350	0
Lane Flow Rate	656	589	389	289
Geometry Grp	2	7	7	2
Degree of Util (X)	1.187	1.247	0.694	0.565
Departure Headway (Hd)	6.793	8.046	6.813	7.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	538	453	533	477
Service Time	4.793	5.746	4.513	5.616
HCM Lane V/C Ratio	1.219	1.3	0.73	0.606
HCM Control Delay	125.3	153.5	23.5	20.1
HCM Lane LOS	F	F	C	C
HCM 95th-tile Q	22.8	22.9	5.4	3.4

Intersection	
Intersection Delay, s/veh	70.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	270	60	110	20	435	5	220	10	5	5
Future Vol, veh/h	10	400	270	60	110	20	435	5	220	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	284	63	116	21	458	5	232	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	29.8	15.9	130.2	11.8
HCM LOS	D	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	66%	2%	0%	32%	50%
Vol Thru, %	1%	98%	0%	58%	25%
Vol Right, %	33%	0%	100%	11%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	660	410	270	190	20
LT Vol	435	10	0	60	10
Through Vol	5	400	0	110	5
RT Vol	220	0	270	20	5
Lane Flow Rate	695	432	284	200	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.206	0.84	0.497	0.397	0.046
Departure Headway (Hd)	6.25	7.578	6.846	7.813	8.355
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	584	483	531	464	431
Service Time	4.277	5.278	4.546	5.813	6.355
HCM Lane V/C Ratio	1.19	0.894	0.535	0.431	0.049
HCM Control Delay	130.2	38.8	16.1	15.9	11.8
HCM Lane LOS	F	E	C	C	B
HCM 95th-tile Q	25.1	8.4	2.7	1.9	0.1

Intersection	
Intersection Delay, s/veh	124.7
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	600	145	190
Future Vol, veh/h	60	70	200	600	145	190
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	732	177	232
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.7	188.8	15.5
HCM LOS	B	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	25%	100%	0%	0%
Vol Thru, %	75%	0%	0%	43%
Vol Right, %	0%	0%	100%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	800	60	70	335
LT Vol	200	60	0	0
Through Vol	600	0	0	145
RT Vol	0	0	70	190
Lane Flow Rate	976	73	85	409
Geometry Grp	2	7	7	2
Degree of Util (X)	1.363	0.154	0.151	0.571
Departure Headway (Hd)	5.031	8.331	7.095	5.463
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	722	433	509	666
Service Time	3.099	6.031	4.795	3.463
HCM Lane V/C Ratio	1.352	0.169	0.167	0.614
HCM Control Delay	188.8	12.5	11.1	15.5
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	40.9	0.5	0.5	3.6

Intersection	
Intersection Delay, s/veh	26.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	380	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	0	380	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	0	452	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	23.6	31.5	15.4
HCM LOS	-	C	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	3%	26%
Vol Thru, %	100%	0%	100%	0%	74%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	390	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	0	160
RT Vol	0	250	0	380	0
Lane Flow Rate	500	298	0	464	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.896	0.474	0	0.741	0.468
Departure Headway (Hd)	6.452	5.738	7.805	5.744	6.586
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	560	625	0	627	543
Service Time	4.226	3.512	5.805	3.807	4.668
HCM Lane V/C Ratio	0.893	0.477	0	0.74	0.471
HCM Control Delay	42.2	13.6	10.8	23.6	15.4
HCM Lane LOS	E	B	N	C	C
HCM 95th-tile Q	10.5	2.5	0	6.5	2.5

Intersection	
Intersection Delay, s/veh	121.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	240	150	0	0	0	150	120	250	330	140	110
Future Vol, veh/h	160	240	150	0	0	0	150	120	250	330	140	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	176	264	165	0	0	0	165	132	275	363	154	121
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	115.3	94.1	152.6
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	29%	57%
Vol Thru, %	23%	44%	24%
Vol Right, %	48%	27%	19%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	550	580
LT Vol	150	160	330
Through Vol	120	240	140
RT Vol	250	150	110
Lane Flow Rate	571	604	637
Geometry Grp	1	1	1
Degree of Util (X)	1.086	1.151	1.248
Departure Headway (Hd)	7.635	7.475	7.661
Convergence, Y/N	Yes	Yes	Yes
Cap	480	490	478
Service Time	5.635	5.475	5.661
HCM Lane V/C Ratio	1.19	1.233	1.333
HCM Control Delay	94.1	115.3	152.6
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.6	19.7	23.8

29: Washington St & San Diego Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2020	0	0	600	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2020	0	0	600	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2126	0	0	632	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2126	0	0	632	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.5	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.5	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.87	0.00	0.00	0.36	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	13.4	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.4	0.0	0.0	0.6	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.2	0.0	0.0	3.7	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.4	0.0	0.0	14.0	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2610			1348	
Approach Delay, s/veh					32.0			7.1			29.3	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.4			17.0	47.4		21.6
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			14.0	40.3		11.9
Green Ext Time (p_c), s		35.8			0.0	0.0		2.0

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

30: Washington St & Hancock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1140	170	300	510	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1140	170	300	510	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1175	175	309	526	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1175	175	309	526	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	9.8	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	9.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.19	0.42	0.90	0.37	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.68	0.68	0.92	0.92	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	13.2	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	92.5	2.0	23.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	22.3	2.8	4.3	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	120.4	23.3	61.9	13.8	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1350			835	
Approach Delay, s/veh		43.7						107.8			31.6	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	35.0		38.0		48.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	9.7	32.1		35.1		11.8
Green Ext Time (p_c), s	0.0	0.0		0.0		4.3

Intersection Summary	
HCM 6th Ctrl Delay	61.2
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	990	0	0	620	170
Future Volume (veh/h)	120	0	150	80	70	200	230	990	0	0	620	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1042	0	0	653	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	41	0	51	378	397	318	212	1470	0	0	953	408
Arrive On Green	0.06	0.00	0.06	0.21	0.21	0.21	0.12	0.52	0.00	0.00	0.34	0.34
Sat Flow, veh/h	727	0	911	1767	1856	1485	1767	2897	0	0	2897	1208
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1042	0	0	653	179
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1485	1767	1411	0	0	1411	1208
Q Serve(g_s), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	19.9	0.0	0.0	14.1	8.2
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	19.9	0.0	0.0	14.1	8.2
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	92	0	0	378	397	318	212	1470	0	0	953	408
V/C Ratio(X)	3.08	0.00	0.00	0.22	0.19	0.66	1.14	0.71	0.00	0.00	0.69	0.44
Avail Cap(c_a), veh/h	92	0	0	648	680	544	212	1814	0	0	1281	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	0.0	23.0	22.8	25.5	31.2	12.9	0.0	0.0	20.2	18.3
Incr Delay (d2), s/veh	961.9	0.0	0.0	0.1	0.1	0.9	105.7	0.6	0.0	0.0	1.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	0.0	0.0	1.1	1.0	3.2	9.7	5.5	0.0	0.0	4.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	995.4	0.0	0.0	23.1	22.9	26.4	136.9	13.6	0.0	0.0	21.4	19.2
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	B
Approach Vol, veh/h		284			369			1284			832	
Approach Delay, s/veh		995.4			25.0			36.8			20.9	
Approach LOS		F			C			D			C	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	41.3	8.0	13.0	28.3	21.6
Change Period (Y+Rc), s	* 4.4	4.0	4.5	4.4	6.4
Max Green Setting (Gmax), s	* 46	4.0	8.5	32.2	26.0
Max Q Clear Time (g_c+I1), s	21.9	6.0	10.5	16.1	11.2
Green Ext Time (p_c), s	5.5	0.0	0.0	5.5	1.2

Intersection Summary	
HCM 6th Ctrl Delay	128.8
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	730	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	730	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	879	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1119	0	830				0	648	119	347	664	0
Arrive On Green	0.32	0.00	0.32				0.00	0.22	0.22	0.20	0.20	0.00
Sat Flow, veh/h	3534	0	1528				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	879	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1528				0	1763	1716	1767	1689	0
Q Serve(g_s), s	12.3	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Cycle Q Clear(g_c), s	12.3	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1119	0	830				0	388	378	347	664	0
V/C Ratio(X)	0.79	0.00	0.13				0.00	0.78	0.79	1.02	0.28	0.00
Avail Cap(c_a), veh/h	2000	0	1211				0	453	441	347	664	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.9	0.0	6.3				0.0	20.0	20.0	21.9	18.6	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0				0.0	6.3	6.9	53.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.8				0.0	4.0	4.0	9.1	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	6.3				0.0	26.3	27.0	75.1	18.9	0.0
LnGrp LOS	B	A	A				A	C	C	F	B	A
Approach Vol, veh/h		983						604			542	
Approach Delay, s/veh		16.2						26.6			55.6	
Approach LOS		B						C			E	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	16.0	23.4	15.0
Change Period (Y+Rc), s	4.0	6.2	4.3
Max Green Setting (Gmax), s	14.0	30.8	10.7
Max Q Clear Time (g_c+I1), s	11.0	14.3	12.7
Green Ext Time (p_c), s	0.8	2.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	110	270	550	70	240	1260	80
Future Volume (veh/h)	100	290	140	430	420	110	270	550	70	240	1260	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	112	276	561	71	245	1286	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	392	388	290	459	120	112	1083	135	183	1460	93
Arrive On Green	0.06	0.26	0.26	0.20	0.39	0.39	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	1767	1537	1522	1464	1168	305	1767	4529	563	1464	4856	310
Grp Volume(v), veh/h	102	296	143	439	0	541	276	416	216	245	894	474
Grp Sat Flow(s),veh/h/ln	1767	1537	1522	1464	0	1472	1767	1689	1715	1464	1689	1789
Q Serve(g_s), s	6.0	18.5	8.0	20.6	0.0	36.7	6.6	11.1	11.4	13.0	26.2	26.2
Cycle Q Clear(g_c), s	6.0	18.5	8.0	20.6	0.0	36.7	6.6	11.1	11.4	13.0	26.2	26.2
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.33	1.00		0.17
Lane Grp Cap(c), veh/h	107	392	388	290	0	578	112	808	410	183	1015	538
V/C Ratio(X)	0.95	0.75	0.37	1.51	0.00	0.94	2.46	0.51	0.53	1.34	0.88	0.88
Avail Cap(c_a), veh/h	107	473	468	290	0	655	112	825	419	183	1032	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	35.7	31.8	41.7	0.0	30.3	48.7	34.3	34.5	45.5	34.6	34.6
Incr Delay (d2), s/veh	71.3	4.2	0.2	248.5	0.0	19.6	683.8	1.0	2.1	184.7	9.3	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	7.3	3.0	27.3	0.0	15.7	24.2	4.6	5.0	14.1	11.8	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.0	40.0	32.1	290.2	0.0	49.9	732.5	35.3	36.5	230.2	43.9	50.6
LnGrp LOS	F	D	C	F	A	D	F	D	D	F	D	D
Approach Vol, veh/h		541			980			908			1613	
Approach Delay, s/veh		53.0			157.5			247.5			74.2	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.2	25.0	31.5	11.0	36.6	10.7	45.8
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	13.4	22.6	20.5	8.6	28.2	8.0	38.7
Green Ext Time (p_c), s	0.0	4.9	0.0	1.1	0.0	3.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	130.5
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	1810	180	130	1040	130	170	510	170	220	1110	910
Future Volume (veh/h)	490	1810	180	130	1040	130	170	510	170	220	1110	910
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	563	2080	207	149	1195	149	195	586	195	253	1276	1046
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	806	100	155	1580	512	276	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.42	0.42	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3142	390	1767	3760	1218	1767	5066	1537
Grp Volume(v), veh/h	563	1114	1173	149	668	676	195	525	256	253	1276	1046
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1770	1767	1689	1601	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	14.9	15.5	19.7	24.1	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	14.9	15.5	19.7	24.1	68.4
Prop In Lane	1.00		0.18	1.00		0.22	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	454	155	1419	672	276	2475	1140
V/C Ratio(X)	1.29	1.55	1.61	0.94	1.48	1.49	1.26	0.37	0.38	0.92	0.52	0.92
Avail Cap(c_a), veh/h	437	718	728	159	452	454	155	1419	672	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	27.9	28.0	58.2	24.5	15.3
Incr Delay (d2), s/veh	146.4	255.5	280.8	52.3	227.0	231.3	156.9	0.7	1.6	25.5	0.8	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.1	75.3	81.6	7.6	44.3	45.1	12.3	6.3	6.3	10.8	9.9	28.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	199.1	297.0	322.3	115.6	279.1	283.4	220.8	28.6	29.7	83.6	25.2	28.3
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	C
Approach Vol, veh/h		2850			1493			976			2575	
Approach Delay, s/veh		288.1			264.7			67.3			32.2	
Approach LOS		F			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	65.0	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	21.7	17.5	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	172.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1890	3050	2080	200	120	60
Future Volume (veh/h)	1890	3050	2080	200	120	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2032	3280	2237	0	129	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4165	2223		160	142
Arrive On Green	0.35	0.82	0.44	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2032	3280	2237	0	129	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	39.2	52.7	0.0	8.6	4.7
Cycle Q Clear(g_c), s	41.6	39.2	52.7	0.0	8.6	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4165	2223		160	142
V/C Ratio(X)	1.71	0.79	1.01		0.81	0.46
Avail Cap(c_a), veh/h	1188	4165	2223		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	5.4	33.7	0.0	53.6	51.8
Incr Delay (d2), s/veh	323.0	1.6	20.6	0.0	3.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	70.5	10.1	25.1	0.0	4.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	362.2	7.0	54.3	0.0	57.2	52.6
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5312	2237	A	194	
Approach Delay, s/veh		142.8	54.3		55.7	
Approach LOS		F	D		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		104.0		16.0	46.0	58.0
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		41.2		10.6	43.6	54.7
Green Ext Time (p_c), s		38.2		0.3	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			115.1
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	190	290	280	100	240	220	1210	210	220	1260	230
Future Volume (veh/h)	190	190	290	280	100	240	220	1210	210	220	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	198	302	292	104	250	229	1260	219	229	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	257	414	337	178	462	378	268	1092	188	249	1507	780
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3428	1856	1508	1767	1856	1517	3428	2993	515	1767	3526	1549
Grp Volume(v), veh/h	198	198	302	292	104	250	229	737	742	229	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1508	1767	1856	1517	1714	1763	1745	1767	1763	1549
Q Serve(g_s), s	6.5	10.7	22.4	11.6	5.1	17.0	7.6	42.0	42.0	14.7	39.1	10.5
Cycle Q Clear(g_c), s	6.5	10.7	22.4	11.6	5.1	17.0	7.6	42.0	42.0	14.7	39.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	257	414	337	178	462	378	268	643	637	249	1507	780
V/C Ratio(X)	0.77	0.48	0.90	1.64	0.22	0.66	0.85	1.15	1.16	0.92	0.87	0.31
Avail Cap(c_a), veh/h	340	500	406	178	497	406	268	643	637	249	1510	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	38.9	43.4	51.7	34.4	38.8	52.4	36.5	36.5	48.8	30.0	16.9
Incr Delay (d2), s/veh	5.3	0.9	19.6	311.6	0.1	2.7	21.6	83.0	90.5	35.8	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.0	9.9	20.4	2.3	6.4	4.0	32.0	33.0	8.8	16.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	39.7	63.0	363.4	34.5	41.5	74.0	119.6	127.0	84.6	36.0	17.2
LnGrp LOS	E	D	E	F	C	D	E	F	F	F	D	B
Approach Vol, veh/h		698			646			1708			1781	
Approach Delay, s/veh		54.9			185.9			116.7			39.7	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.2	13.4	54.5	13.0	34.2
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	16.7	44.0	13.6	24.4	9.6	41.1	8.5	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	6.6	0.1	0.6

Intersection Summary			
HCM 6th Ctrl Delay			88.7
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1270	320	290	570	0	0	0	0	190	0	1090
Future Volume (veh/h)	0	1270	320	290	570	0	0	0	0	190	0	1090
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1337	337	305	600	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1522	679	999	2725	0				231	0	
Arrive On Green	0.00	0.43	0.43	0.58	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1337	337	305	600	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	34.7	15.5	4.5	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.7	15.5	4.5	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1522	679	999	2725	0				231	0	
V/C Ratio(X)	0.00	0.88	0.50	0.31	0.22	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	999	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.13	0.13	0.43	0.43	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	26.0	20.5	15.7	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.3	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.6	5.4	1.6	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.1	20.9	15.8	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	C	B	A	A				D	A	
Approach Vol, veh/h		1674			905						200	A
Approach Delay, s/veh		25.8			5.4						50.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	34.1	48.2		17.7		82.3
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	16.5	36.7		13.1		2.0
Green Ext Time (p_c), s	0.6	6.5		0.1		2.8

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	900	560	0	0	540	380	320	10	640	0	0	0
Future Volume (veh/h)	900	560	0	0	540	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	909	566	0	0	545	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	977	2168	0	0	543	382	488	15	447			
Arrive On Green	0.48	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2031	1365	1717	53	1572			
Grp Volume(v), veh/h	909	566	0	0	496	433	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1540	1770	0	1572			
Q Serve(g_s), s	24.9	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	24.9	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.89	0.97		1.00			
Lane Grp Cap(c), veh/h	977	2168	0	0	494	431	503	0	447			
V/C Ratio(X)	0.93	0.26	0.00	0.00	1.00	1.00	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1005	2168	0	0	494	431	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.3	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	9.1	0.2	0.0	0.0	41.6	44.5	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	0.0	17.3	15.4	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.2	0.0	0.0	77.6	80.5	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1475			929			979				
Approach Delay, s/veh		21.2			78.9			176.0				
Approach LOS		C			E			F				

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	67.0		33.0	34.0	33.0
Change Period (Y+Rc), s	5.5		4.6	5.5	* 5
Max Green Setting (Gmax), s	61.5		28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s	2.0		30.4	26.9	30.0
Green Ext Time (p_c), s	2.6		0.0	1.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1050	10	360	820	0	1250
Future Volume (veh/h)	1050	10	360	820	0	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1115	0	379	0	0	1316
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1230	560	1562		0	1562
Arrive On Green	0.35	0.00	0.44	0.00	0.00	0.44
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1115	0	379	0	0	1316
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	20.4	0.0	4.6	0.0	0.0	22.6
Cycle Q Clear(g_c), s	20.4	0.0	4.6	0.0	0.0	22.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1230	560	1562		0	1562
V/C Ratio(X)	0.91	0.00	0.24		0.00	0.84
Avail Cap(c_a), veh/h	1273	580	1562		0	1562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	11.8	0.0	0.0	16.8
Incr Delay (d2), s/veh	9.5	0.0	0.4	0.0	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	1.7	0.0	0.0	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.6	0.0	12.2	0.0	0.0	22.5
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1115		379	A		1316
Approach Delay, s/veh	30.6		12.2			22.5
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.6	35.6	32.4
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.6	24.6	22.4
Green Ext Time (p_c), s	3.3	4.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX I

YEAR 2050 NO ACTION ALTERNATIVE FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6840	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1254
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6800	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1247
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8310	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1524
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9610	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1762
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7870	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1742
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8390	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1858
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8950	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1982
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1979
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1844
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8880	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1966
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9480	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2099
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9470	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2097
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9230	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2044
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	49.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9840	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2179
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10500	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2325
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10490	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2322
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7650	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2117
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8160	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2258
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8700	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2408
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8700	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2408
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10490	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2322
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2475
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11930	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2641
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11920	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2639
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9130	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2021
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2159
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9740	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2156
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	3840	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1050
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	3010	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	823
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.2
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4880	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1334
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4700	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1285
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4080	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1115
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5590	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1528
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5750	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2096
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.8
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4390	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1600
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6800	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1487
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9330	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2040
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9600	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2099
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7330	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1603
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6390	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1747
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8760	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2394
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9020	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1972
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6880	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1504
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6830	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1865
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9370	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2558
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.15
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9650	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2108
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7360	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1608
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX J

YEAR 2050 WITH ALTERNATIVE 1 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	714
Future Volume (vph)	190	210	90	140	140	714
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	776

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	776
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	776
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.69
Capacity (veh/h)	610	667	741	577	1120
Control Delay (s)	10.4	9.6	9.9	10.5	13.0
Approach Delay (s)	10.0		9.9	12.6	
Approach LOS	A		A	B	

Intersection Summary			
Delay	11.5		
Level of Service	B		
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	241	120	744	60	280	190
Future Volume (veh/h)	241	120	744	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	256	128	791	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	317	1101	1161		533	527
Arrive On Green	0.18	0.59	0.33	0.00	0.16	0.16
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	256	128	791	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	6.9	1.5	9.6	0.0	4.0	4.9
Cycle Q Clear(g_c), s	6.9	1.5	9.6	0.0	4.0	4.9
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	317	1101	1161		533	527
V/C Ratio(X)	0.81	0.12	0.68		0.56	0.38
Avail Cap(c_a), veh/h	704	2052	2198		1551	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	4.4	14.4	0.0	19.4	12.6
Incr Delay (d2), s/veh	1.9	0.0	0.3	0.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.4	3.3	0.0	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.4	4.4	14.7	0.0	19.8	12.8
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		384	791	A	500	
Approach Delay, s/veh		15.8	14.7		16.9	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		35.5		14.2	13.1	22.4
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.5		6.9	8.9	11.6
Green Ext Time (p_c), s		0.5		0.9	0.3	3.7

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	252	0	0	10	360	251	5	10	734	220
Future Volume (veh/h)	140	5	252	0	0	10	360	251	5	10	734	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	265				379	264	5	11	773	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	844	0	574				461	1738	33	20	968	290
Arrive On Green	0.24	0.00	0.24				0.13	0.49	0.49	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1517				3428	3536	67	1767	2629	789
Grp Volume(v), veh/h	151	0	265				379	131	138	11	518	487
Grp Sat Flow(s),veh/h/ln	1767	0	1517				1714	1763	1840	1767	1763	1655
Q Serve(g_s), s	1.9	0.0	7.5				6.1	2.3	2.3	0.3	14.9	14.9
Cycle Q Clear(g_c), s	1.9	0.0	7.5				6.1	2.3	2.3	0.3	14.9	14.9
Prop In Lane	1.00		1.00				1.00		0.04	1.00		0.48
Lane Grp Cap(c), veh/h	844	0	574				461	866	904	20	649	609
V/C Ratio(X)	0.18	0.00	0.46				0.82	0.15	0.15	0.55	0.80	0.80
Avail Cap(c_a), veh/h	1877	0	1017				461	866	904	160	712	668
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	13.4				23.8	7.9	7.9	27.8	16.0	16.0
Incr Delay (d2), s/veh	0.2	0.0	1.0				10.7	0.1	0.1	8.7	6.3	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	6.9				3.0	0.7	0.8	0.2	6.3	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	14.4				34.4	8.0	8.0	36.5	22.3	22.7
LnGrp LOS	B	A	B				C	A	A	D	C	C
Approach Vol, veh/h		416						648			1016	
Approach Delay, s/veh		15.4						23.5			22.6	
Approach LOS		B						C			C	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.0	32.7		18.8	12.0	25.7
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.3	4.3		9.5	8.1	16.9
Green Ext Time (p_c), s	0.0	1.6		2.6	0.0	3.7

Intersection Summary		
HCM 6th Ctrl Delay		21.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	81	10	210	50	401	30	130	676	40
Future Volume (veh/h)	10	10	10	81	10	210	50	401	30	130	676	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	84	10	219	52	418	31	135	704	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	220	211	166	185	50	329	74	1423	104	174	1190	71
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	386	679	533	292	161	1057	1767	4797	350	1767	3369	201
Grp Volume(v), veh/h	30	0	0	313	0	0	52	292	157	135	368	378
Grp Sat Flow(s),veh/h/ln	1598	0	0	1510	0	0	1767	1689	1771	1767	1763	1807
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	0.0	1.4	3.2	3.3	3.6	8.2	8.3
Cycle Q Clear(g_c), s	0.6	0.0	0.0	8.5	0.0	0.0	1.4	3.2	3.3	3.6	8.2	8.3
Prop In Lane	0.33		0.33	0.27		0.70	1.00		0.20	1.00		0.11
Lane Grp Cap(c), veh/h	596	0	0	564	0	0	74	1002	525	174	623	638
V/C Ratio(X)	0.05	0.00	0.00	0.55	0.00	0.00	0.71	0.29	0.30	0.78	0.59	0.59
Avail Cap(c_a), veh/h	1047	0	0	1026	0	0	205	1756	921	388	1099	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	0.0	14.3	0.0	0.0	22.8	13.1	13.1	21.2	12.8	12.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	4.6	0.2	0.4	2.8	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.5	0.0	0.0	0.6	1.1	1.2	1.5	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	0.0	14.6	0.0	0.0	27.4	13.3	13.5	24.1	14.0	13.9
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			313			501			881	
Approach Delay, s/veh		11.7			14.6			14.8			15.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	19.2		19.9	6.4	22.0		19.9
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	5.6	5.3		2.6	3.4	10.3		10.5
Green Ext Time (p_c), s	0.1	3.7		0.1	0.0	6.1		1.3

Intersection Summary		
HCM 6th Ctrl Delay		15.1
HCM 6th LOS		B

Year 2050A + P1 AM | Old Town Complex

5: Congress St & Taylor St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	341	230	180	597	0	180	0	150	0	0	0
Future Volume (veh/h)	0	341	230	180	597	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	352	237	186	615	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	883	385	232	1571	0	426	0	314	0	380	0
Arrive On Green	0.00	0.33	0.33	0.13	0.57	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2790	1161	1767	2849	0	1258	0	1531	0	1856	0
Grp Volume(v), veh/h	0	352	237	186	615	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1161	1767	1388	0	1258	0	1531	0	1856	0
Q Serve(g_s), s	0.0	4.4	7.3	4.4	5.3	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.4	7.3	4.4	5.3	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	883	385	232	1571	0	426	0	314	0	380	0
V/C Ratio(X)	0.00	0.40	0.62	0.80	0.39	0.00	0.44	0.00	0.49	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1561	682	232	2279	0	1054	0	1078	0	1346	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.0	12.0	18.0	5.2	0.0	15.9	0.0	15.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	1.5	17.0	0.1	0.0	0.3	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.7	2.6	0.9	0.0	1.5	0.0	1.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.3	13.5	35.0	5.2	0.0	16.1	0.0	15.5	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		589			801			341			0	
Approach Delay, s/veh		12.2			12.2			15.8			0.0	
Approach LOS		B			B			B				
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.0	19.1		13.7		29.1		13.7				
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9				
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1				
Max Q Clear Time (g_c+I1), s	6.4	9.3		0.0		7.3		7.9				
Green Ext Time (p_c), s	0.0	3.5		0.0		3.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			12.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P1 AM | Old Town Complex

6: Pacific Hwy & Rosecrans St/Taylor St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	310	230	327	270	180	280	490	211	80	336	200
Future Volume (veh/h)	110	310	230	327	270	180	280	490	211	80	336	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.93	1.00		0.95	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	118	333	247	352	290	194	301	527	227	86	361	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	876	529	325	518	407	139	998	483	102	979	387
Arrive On Green	0.08	0.32	0.32	0.12	0.35	0.35	0.08	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1767	2776	1285	2699	1461	1148	1767	3526	1178	1391	3526	1395
Grp Volume(v), veh/h	118	333	247	352	290	194	301	527	227	86	361	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1285	1350	1461	1148	1767	1763	1178	1391	1763	1395
Q Serve(g_s), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.2	16.1	6.9	9.3	14.9
Cycle Q Clear(g_c), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.2	16.1	6.9	9.3	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	876	529	325	518	407	139	998	483	102	979	387
V/C Ratio(X)	0.82	0.38	0.47	1.08	0.56	0.48	2.16	0.53	0.47	0.84	0.37	0.56
Avail Cap(c_a), veh/h	147	888	535	325	522	410	139	1184	545	111	1187	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	30.0	25.6	49.6	29.3	28.3	52.0	34.1	24.9	51.6	32.8	34.8
Incr Delay (d2), s/veh	27.2	0.3	0.8	73.6	0.9	0.5	545.0	0.4	0.7	36.3	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.6	5.0	7.9	6.4	4.1	25.0	6.1	4.5	3.4	4.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	30.4	26.4	123.2	30.3	28.7	597.0	34.5	25.6	87.9	32.9	35.3
LnGrp LOS	E	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		698			836			1055			662	
Approach Delay, s/veh		37.0			69.0			193.1			40.8	
Approach LOS		D			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	41.5	14.3	38.0	14.6	45.9	13.7	38.7				
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7				
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9				
Max Q Clear Time (g_c+I1), s	15.6	18.3	10.9	16.9	9.4	20.0	8.9	18.1				
Green Ext Time (p_c), s	0.0	3.7	0.0	2.0	0.0	1.6	0.0	4.4				
Intersection Summary												
HCM 6th Ctrl Delay			96.7									
HCM 6th LOS			F									

Intersection						
Int Delay, s/veh	2.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	600	610	140
Future Vol, veh/h	50	30	70	600	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	612	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1246	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	177	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	345	706	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43.5	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	172	-	-
HCM Lane V/C Ratio	0.101	-	0.475	-	-
HCM Control Delay (s)	10.7	-	43.5	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	380	360	2020	0	0	2584	630
Future Volume (veh/h)	0	0	0	90	650	380	360	2020	0	0	2584	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	392	371	2082	0	0	2664	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				89	655	412	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				264	1935	1219	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				648	0	507	371	2082	0	0	2664	649
Grp Sat Flow(s),veh/h/ln				1842	0	1576	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	533	341	3632	0	0	2463	736
V/C Ratio(X)				1.04	0.00	0.95	1.09	0.57	0.00	0.00	1.08	0.88
Avail Cap(c_a), veh/h				624	0	533	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.23	0.23	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.9	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				46.6	0.0	26.7	51.0	0.2	0.0	0.0	44.7	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				27.9	0.0	19.7	13.7	0.1	0.0	0.0	34.9	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				89.6	0.0	68.7	90.9	0.2	0.0	0.0	78.1	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1155			2453			3313	
Approach Delay, s/veh					80.4			13.9			71.5	
Approach LOS					F			B			E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2
Green Ext Time (p_c), s		8.6		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1760	30	300	2494	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1760	30	300	2494	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	1853	32	316	2625	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2366	41	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5293	88	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1220	665	316	2625	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1837	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	848	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.78	0.78	1.08	0.62	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	848	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.58	0.58	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.2	3.2	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	2.4	4.3	40.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	14.3	4.8				0.0	2.0	2.6	11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	5.5	7.5	84.2	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						1885			2941	
Approach Delay, s/veh		52.4						6.2			9.1	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.0	64.9		39.1		90.9
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	21.6	49.1		45.1		75.1
Max Q Clear Time (g_c+I1), s	23.6	15.1		30.9		2.0
Green Ext Time (p_c), s	0.0	5.8		1.1		14.5

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	300	20	211	0	370	0	440	215	90	320	0
Future Volume (veh/h)	300	300	20	211	0	370	0	440	215	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.84	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	323	22	227	0	398	0	473	231	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	497	481	33	0	0	0	0	838	403	393	1870	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.39	0.39	0.06	0.53	0.00
Sat Flow, veh/h	1767	1712	117		0		0	2254	1041	1767	3618	0
Grp Volume(v), veh/h	323	0	345		0.0		0	385	319	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1829				0	1763	1439	1767	1763	0
Q Serve(g_s), s	8.4	0.0	8.7				0.0	8.9	9.1	1.6	2.6	0.0
Cycle Q Clear(g_c), s	8.4	0.0	8.7				0.0	8.9	9.1	1.6	2.6	0.0
Prop In Lane	1.00		0.06				0.00		0.72	1.00		0.00
Lane Grp Cap(c), veh/h	497	0	514				0	683	558	393	1870	0
V/C Ratio(X)	0.65	0.00	0.67				0.00	0.56	0.57	0.25	0.18	0.00
Avail Cap(c_a), veh/h	786	0	813				0	818	668	481	2314	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	16.5				0.0	12.5	12.5	8.7	6.3	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.5				0.0	3.3	4.2	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	3.4				0.0	3.6	3.1	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	18.1				0.0	15.8	16.8	8.8	6.6	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		668						704			441	
Approach Delay, s/veh		18.0						16.2			7.1	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.4	25.0		19.5		32.4
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	24.1		23.1		34.1
Max Q Clear Time (g_c+I1), s	3.6	11.1		10.7		4.6
Green Ext Time (p_c), s	0.0	8.1		2.6		6.4

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	302	141	201	310	20	140	1590	353	0	2084	490
Future Volume (veh/h)	220	302	141	201	310	20	140	1590	353	0	2084	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	183	386	148	186	362	21	147	1674	372	0	2194	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	392	824	315	214	420	24	140	2154	472	0	2220	
Arrive On Green	0.22	0.22	0.22	0.12	0.12	0.12	0.08	1.00	1.00	0.00	0.88	0.00
Sat Flow, veh/h	1767	3711	1417	1767	3465	200	3428	4138	907	0	5233	1572
Grp Volume(v), veh/h	183	386	148	186	193	190	147	1362	684	0	2194	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1417	1767	1856	1810	1714	1689	1668	0	1689	1572
Q Serve(g_s), s	11.7	11.7	11.8	13.4	13.3	13.4	5.3	0.0	0.0	0.0	51.9	0.0
Cycle Q Clear(g_c), s	11.7	11.7	11.8	13.4	13.3	13.4	5.3	0.0	0.0	0.0	51.9	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.54	0.00		1.00
Lane Grp Cap(c), veh/h	392	824	315	214	225	219	140	1758	869	0	2220	
V/C Ratio(X)	0.47	0.47	0.47	0.87	0.86	0.87	1.05	0.77	0.79	0.00	0.99	
Avail Cap(c_a), veh/h	489	1028	392	245	257	251	140	1758	869	0	2220	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	0.57	0.57	0.57	0.00	0.74	0.00
Uniform Delay (d), s/veh	43.9	43.9	43.9	56.1	56.0	56.1	59.7	0.0	0.0	0.0	7.7	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.4	20.9	18.6	20.1	71.7	2.0	4.2	0.0	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.4	4.2	7.2	7.4	7.3	3.6	0.5	1.0	0.0	5.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	44.1	44.3	77.0	74.6	76.2	131.4	2.0	4.2	0.0	21.6	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	C	
Approach Vol, veh/h		717			569			2193			2194	A
Approach Delay, s/veh		44.1			75.9			11.3			21.6	
Approach LOS		D			E			B			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		73.6		34.8	10.7	62.9		21.6
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		2.0		13.8	7.3	53.9		15.4
Green Ext Time (p_c), s		7.3		1.1	0.0	0.0		0.3

Intersection Summary		
HCM 6th Ctrl Delay		25.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	301	160	150	410	211	200	1563	140	305	1671	170
Future Volume (veh/h)	301	301	160	150	410	211	200	1563	140	305	1671	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	314	314	167	156	427	220	208	1628	146	318	1741	177
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	701	301	171	661	279	258	1751	157	618	2237	227
Arrive On Green	0.10	0.20	0.20	0.10	0.19	0.19	0.08	0.37	0.37	0.36	0.96	0.96
Sat Flow, veh/h	3428	3526	1513	1767	3526	1487	3428	4721	423	3428	4662	472
Grp Volume(v), veh/h	314	314	167	156	427	220	208	1164	610	318	1259	659
Grp Sat Flow(s),veh/h/ln	1714	1763	1513	1767	1763	1487	1714	1689	1766	1714	1689	1758
Q Serve(g_s), s	11.7	10.2	12.9	11.4	14.6	18.3	7.8	43.0	43.2	9.5	7.7	7.9
Cycle Q Clear(g_c), s	11.7	10.2	12.9	11.4	14.6	18.3	7.8	43.0	43.2	9.5	7.7	7.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.27
Lane Grp Cap(c), veh/h	359	701	301	171	661	279	258	1252	655	618	1620	843
V/C Ratio(X)	0.88	0.45	0.55	0.91	0.65	0.79	0.81	0.93	0.93	0.51	0.78	0.78
Avail Cap(c_a), veh/h	359	881	378	171	854	360	282	1343	702	618	1620	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62	0.22	0.22	0.22
Uniform Delay (d), s/veh	57.4	45.8	46.9	58.1	48.8	50.4	59.2	39.3	39.3	37.1	1.5	1.5
Incr Delay (d2), s/veh	20.0	0.2	0.6	43.2	0.4	6.4	8.5	9.1	15.4	0.1	0.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	4.5	4.9	7.1	6.5	7.3	3.7	19.0	21.1	3.5	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	46.0	47.5	101.3	49.2	56.8	67.7	48.4	54.7	37.2	2.4	3.2
LnGrp LOS	E	D	D	F	D	E	E	D	D	D	A	A
Approach Vol, veh/h		795			803			1982			2236	
Approach Delay, s/veh		58.7			61.4			52.3			7.6	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.1	53.1	17.0	30.8	14.2	68.1	18.5	29.3
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	11.5	45.2	13.4	14.9	9.8	9.9	13.7	20.3
Green Ext Time (p_c), s	0.1	3.1	0.0	0.8	0.0	6.2	0.0	1.1

Intersection Summary		
HCM 6th Ctrl Delay		37.3
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

13: Rosecrans St & Lytton St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	341	10	650	360	120	10	1161	542	120	1620	231
Future Volume (veh/h)	392	341	10	650	360	120	10	1161	542	120	1620	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	400	348	10	663	367	122	10	1185	553	122	1653	236
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	394	11	612	409	334	21	2043	618	169	1555	666
Arrive On Green	0.17	0.22	0.22	0.18	0.22	0.22	0.01	0.40	0.40	0.10	0.88	0.88
Sat Flow, veh/h	1767	1793	52	3428	1856	1517	1767	5066	1534	3428	3526	1511
Grp Volume(v), veh/h	400	0	358	663	367	122	10	1185	553	122	1653	236
Grp Sat Flow(s),veh/h/ln	1767	0	1844	1714	1856	1517	1767	1689	1534	1714	1763	1511
Q Serve(g_s), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	23.7	43.7	4.5	57.3	1.9
Cycle Q Clear(g_c), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	23.7	43.7	4.5	57.3	1.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	405	612	409	334	21	2043	618	169	1555	666
V/C Ratio(X)	1.30	0.00	0.88	1.08	0.90	0.36	0.49	0.58	0.89	0.72	1.06	0.35
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	2043	618	232	1555	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	53.7	0.0	49.1	53.4	49.2	30.7	63.9	30.2	36.2	57.7	7.7	1.3
Incr Delay (d2), s/veh	157.7	0.0	14.6	58.8	14.1	0.2	6.4	1.2	17.9	1.9	36.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	0.0	12.9	15.0	13.2	2.8	0.4	9.7	19.2	1.9	11.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	211.4	0.0	63.7	112.2	63.4	30.9	70.3	31.4	54.1	59.6	44.4	2.1
LnGrp LOS	F	A	E	F	E	C	E	C	D	E	F	A
Approach Vol, veh/h		758			1152			1748			2011	
Approach Delay, s/veh		141.6			88.1			38.8			40.4	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	58.1	27.6	33.5	5.9	63.0	27.5	33.6
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	45.7	25.2	26.4	2.7	59.3	24.6	27.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	63.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

14: Truxtun Rd & Lytton St/Barnett Ave

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	793	210	650	970	90	180
Future Volume (veh/h)	793	210	650	970	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	835	221	684	1021	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	848	224	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2818	721	1767	3618	538	1071
Grp Volume(v), veh/h	540	516	684	1021	285	0
Grp Sat Flow(s),veh/h/ln	1763	1683	1767	1763	1615	0
Q Serve(g_s), s	27.4	27.4	28.5	12.0	15.2	0.0
Cycle Q Clear(g_c), s	27.4	27.4	28.5	12.0	15.2	0.0
Prop In Lane		0.43	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	524	560	2370	344	0
V/C Ratio(X)	0.98	0.98	1.22	0.43	0.83	0.00
Avail Cap(c_a), veh/h	549	524	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.8	30.8	30.7	6.8	33.8	0.0
Incr Delay (d2), s/veh	28.3	29.2	115.4	0.6	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	14.9	29.5	4.0	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	59.1	60.0	146.1	7.4	41.4	0.0
LnGrp LOS	E	E	F	A	D	A
Approach Vol, veh/h	1056			1705	285	
Approach Delay, s/veh	59.5			63.0	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.5	33.4				65.9		24.1
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	29.4				14.0		17.2
Green Ext Time (p_c), s	0.0	0.0				9.4		0.3

Intersection Summary	
HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	320	666	30	0	612
Future Vol, veh/h	0	320	666	30	0	612
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	368	766	34	0	703

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	420	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	579	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	568	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	568	-
HCM Lane V/C Ratio	-	-	0.648	-
HCM Control Delay (s)	-	-	22.2	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.6	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	983	1570	696	532	80
Future Volume (veh/h)	0	983	1570	696	532	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1003	1602	710	543	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1920	1920	1174	758	
Arrive On Green	0.00	0.54	0.54	0.54	0.22	0.00
Sat Flow, veh/h	0	3711	3618	1516	3428	1572
Grp Volume(v), veh/h	0	1003	1602	710	543	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1516	1714	1572
Q Serve(g_s), s	0.0	8.2	17.2	9.3	6.6	0.0
Cycle Q Clear(g_c), s	0.0	8.2	17.2	9.3	6.6	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1920	1920	1174	758	
V/C Ratio(X)	0.00	0.52	0.83	0.60	0.72	
Avail Cap(c_a), veh/h	0	1978	1978	1198	1817	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.6	8.6	2.3	16.3	0.0
Incr Delay (d2), s/veh	0.0	0.2	3.2	0.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	5.0	4.1	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.8	11.8	3.2	17.3	0.0
LnGrp LOS	A	A	B	A	B	
Approach Vol, veh/h		1003	2312		543	A
Approach Delay, s/veh		6.8	9.1		17.3	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.1		15.2		30.1
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		10.2		8.6		19.2
Green Ext Time (p_c), s		6.2		1.4		5.5

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	40	5	40	140	741	50	130	633	170
Future Volume (veh/h)	30	0	50	40	5	40	140	741	50	130	633	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	47	6	47	165	872	59	153	745	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	179	32	153	412	28	223	210	1780	120	195	1421	376
Arrive On Green	0.16	0.00	0.16	0.16	0.16	0.16	0.12	0.37	0.37	0.11	0.36	0.36
Sat Flow, veh/h	362	193	935	1314	174	1364	1767	4831	326	1767	3944	1044
Grp Volume(v), veh/h	94	0	0	47	0	53	165	609	322	153	636	309
Grp Sat Flow(s),veh/h/ln	1490	0	0	1314	0	1538	1767	1689	1780	1767	1689	1611
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.2	3.7	5.7	5.7	3.5	6.1	6.2
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.0	0.0	1.2	3.7	5.7	5.7	3.5	6.1	6.2
Prop In Lane	0.37		0.63	1.00		0.89	1.00		0.18	1.00		0.65
Lane Grp Cap(c), veh/h	364	0	0	412	0	252	210	1244	656	195	1217	581
V/C Ratio(X)	0.26	0.00	0.00	0.11	0.00	0.21	0.79	0.49	0.49	0.78	0.52	0.53
Avail Cap(c_a), veh/h	1242	0	0	1219	0	1196	288	1708	900	326	1773	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	0.0	14.8	0.0	14.9	17.6	10.0	10.0	17.8	10.4	10.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.2	6.4	0.4	0.8	2.6	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.3	0.0	0.4	1.7	1.7	1.8	1.4	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	14.8	0.0	15.1	24.0	10.4	10.8	20.4	10.8	11.3
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		94			100			1096			1098	
Approach Delay, s/veh		15.4			14.9			12.6			12.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	20.6		11.6	9.3	20.2		11.6
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.5	7.7		4.1	5.7	8.2		3.2
Green Ext Time (p_c), s	0.0	6.2		0.3	0.0	5.9		0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	41.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	345	581	911	643	20
Future Vol, veh/h	0	345	581	911	643	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	383	646	1012	714	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	388	746	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	519	~ 515	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	509	~ 510	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.6	61.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 510	-	509	-	-
HCM Lane V/C Ratio	1.266	-	0.753	-	-
HCM Control Delay (s)	159	-	30.6	-	-
HCM Lane LOS	F	-	D	-	-
HCM 95th %tile Q(veh)	26.2	-	6.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	120	0	1484	843	133
Future Vol, veh/h	0	120	0	1484	843	133
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	138	0	1706	969	153

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	581	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	454	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	445	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	445	-	-
HCM Lane V/C Ratio	-	0.31	-	-
HCM Control Delay (s)	-	16.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	20	30	20	30	10	420	1453	260	120	653	190
Future Volume (veh/h)	21	20	30	20	30	10	420	1453	260	120	653	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.70	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	23	22	33	22	33	11	467	1614	289	133	726	211
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	32	630	534	31	629	372	280	1279	530	143	782	227
Arrive On Green	0.02	0.34	0.34	0.02	0.34	0.34	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1096	1767	3526	1462	1767	2659	773
Grp Volume(v), veh/h	23	22	33	22	33	11	467	1614	289	133	481	456
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1096	1767	1763	1462	1767	1763	1669
Q Serve(g_s), s	1.5	0.9	1.7	1.5	1.4	0.8	18.6	42.6	18.4	8.8	31.2	31.2
Cycle Q Clear(g_c), s	1.5	0.9	1.7	1.5	1.4	0.8	18.6	42.6	18.4	8.8	31.2	31.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	32	630	534	31	629	372	280	1279	530	143	518	491
V/C Ratio(X)	0.72	0.03	0.06	0.71	0.05	0.03	1.67	1.26	0.54	0.93	0.93	0.93
Avail Cap(c_a), veh/h	77	630	534	87	632	373	280	1279	530	143	524	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	25.9	26.2	57.4	26.1	25.9	49.4	37.4	29.7	53.7	40.3	40.3
Incr Delay (d2), s/veh	11.0	0.0	0.0	10.8	0.0	0.0	316.5	124.2	1.4	54.1	24.2	25.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.4	0.6	0.7	0.6	0.2	32.8	40.0	6.6	6.0	16.8	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	25.9	26.2	68.2	26.1	25.9	365.9	161.6	31.1	107.7	64.4	65.4
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	E	E
Approach Vol, veh/h		78			66			2370			1070	
Approach Delay, s/veh		38.6			40.1			186.0			70.2	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.3	6.4	44.8	23.0	43.2	6.5	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.8	44.6	3.5	3.7	20.6	33.2	3.5	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	1.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	145.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	430.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱	↰	↑↑	↑↑	↱
Traffic Vol, veh/h	0	1512	2094	2133	573	130
Future Vol, veh/h	0	1512	2094	2133	573	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1643	2276	2318	623	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	332	774	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 661	~ 831	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 648	~ 823	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 710.9	$ 401.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 823	-	648	-	-
HCM Lane V/C Ratio	2.766	-	2.536	-	-
HCM Control Delay (s)	$ 810.7	-	$ 710.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	186.2	-	129.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			✥			✥	
Traffic Volume (veh/h)	5	80	151	430	300	10	390	110	270	5	50	10
Future Volume (veh/h)	5	80	151	430	300	10	390	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	196	558	390	13	506	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	221	416	397	716	24	410	90	222	85	634	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	549	1035	1056	1781	59	735	208	510	48	1459	276
Grp Volume(v), veh/h	6	0	300	558	0	403	1000	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1584	1056	0	1841	1453	0	0	1783	0	0
Q Serve(g_s), s	0.3	0.0	8.4	15.7	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	8.4	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.51		0.35	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	636	397	0	739	723	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.47	1.41	0.00	0.55	1.38	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	636	397	0	739	723	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.2	24.5	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.9	197.5	0.0	0.9	181.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8	27.2	0.0	3.8	45.7	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.1	222.1	0.0	14.6	199.7	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		306			961			1000			84	
Approach Delay, s/veh		14.2			135.1			199.7			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	29.0	31.0	29.0	31.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	24.1	26.1	24.1	26.1
Max Q Clear Time (g_c+I1), s	12.3	3.7	26.1	28.1
Green Ext Time (p_c), s	2.2	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	142.4
HCM 6th LOS	F

Year 2050A + P1 AM
23: Old Town Ave & Moore St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	152	480	50	0	311	390
Future Volume (veh/h)	0	0	20	40	390	370	152	480	50	0	311	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	188	593	62	0	384	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	88	87	7	0	325	407
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	198	16	0	736	921
Grp Volume(v), veh/h	0	0	25	987	0	0	843	0	0	0	0	865
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	213	0	0	0	0	1657
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.22		0.07	0.00		0.56
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	182	0	0	0	0	732
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	4.62	0.00	0.00	0.00	0.00	1.18
Avail Cap(c_a), veh/h	0	0	569	676	0	0	182	0	0	0	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	14.2	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	1642.3	0.0	0.0	0.0	0.0	95.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	84.2	0.0	0.0	0.0	0.0	25.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	1656.5	0.0	0.0	0.0	0.0	109.2
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			843			865	
Approach Delay, s/veh		10.4			232.0			1656.5			109.2	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0	23.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	24.1	2.5	24.1	20.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	632.4
HCM 6th LOS	F

Year 2050A + P1 AM
24: Hancock St/Old Town Ave & I-5 SB Off-Ramp

Old Town Complex
08/13/2020

Intersection	
Intersection Delay, s/veh	113.2
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	854	0	162	91	0
Future Vol, veh/h	450	854	0	162	91	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1017	0	193	108	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	132.9	12.2	10.9
HCM LOS	F	B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	450	854	91
LT Vol	0	450	0	0
Through Vol	162	0	0	91
RT Vol	0	0	854	0
Lane Flow Rate	193	536	1017	108
Geometry Grp	2	7	7	2
Degree of Util (X)	0.324	0.892	1.351	0.187
Departure Headway (Hd)	6.217	5.993	4.784	6.396
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	605	762	564
Service Time	4.217	3.717	2.507	4.396
HCM Lane V/C Ratio	0.332	0.886	1.335	0.191
HCM Control Delay	12.2	39.2	182.2	10.9
HCM Lane LOS	B	E	F	B
HCM 95th-tile Q	1.4	10.7	41.9	0.7

Intersection	
Intersection Delay, s/veh	30.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	653	21	50	5	92	5	120	5	5	5
Future Vol, veh/h	5	300	653	21	50	5	92	5	120	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	742	24	57	6	105	6	136	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	36.8	9.9	12.6	9.7
HCM LOS	E	A	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	42%	2%	0%	28%	33%
Vol Thru, %	2%	98%	0%	66%	33%
Vol Right, %	55%	0%	100%	7%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	305	653	76	15
LT Vol	92	5	0	21	5
Through Vol	5	300	0	50	5
RT Vol	120	0	653	5	5
Lane Flow Rate	247	347	742	86	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.393	0.523	0.972	0.142	0.031
Departure Headway (Hd)	5.742	5.428	4.714	5.905	6.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	659	764	611	555
Service Time	3.841	3.208	2.493	3.907	4.492
HCM Lane V/C Ratio	0.399	0.527	0.971	0.141	0.031
HCM Control Delay	12.6	14.1	47.4	9.9	9.7
HCM Lane LOS	B	B	E	A	A
HCM 95th-tile Q	1.9	3.1	15.3	0.5	0.1

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	122	230	450
Future Vol, veh/h	95	100	80	122	230	450
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	127	240	469
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.8	11.2	29.8
HCM LOS	B	B	D

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	40%	100%	0%	0%
Vol Thru, %	60%	0%	0%	34%
Vol Right, %	0%	0%	100%	66%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	95	100	680
LT Vol	80	95	0	0
Through Vol	122	0	0	230
RT Vol	0	0	100	450
Lane Flow Rate	210	99	104	708
Geometry Grp	2	7	7	2
Degree of Util (X)	0.323	0.198	0.173	0.872
Departure Headway (Hd)	5.528	7.204	5.982	4.432
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	652	501	602	808
Service Time	3.547	4.914	3.691	2.525
HCM Lane V/C Ratio	0.322	0.198	0.173	0.876
HCM Control Delay	11.2	11.7	9.9	29.8
HCM Lane LOS	B	B	A	D
HCM 95th-tile Q	1.4	0.7	0.6	11

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	122	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	0	122	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	0	137	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	8.7	8.3	11.6
HCM LOS	-	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	8%	9%
Vol Thru, %	100%	0%	100%	0%	91%
Vol Right, %	0%	100%	0%	92%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	132	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	0	300
RT Vol	0	40	0	122	0
Lane Flow Rate	90	45	0	148	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.13	0.056	0	0.188	0.471
Departure Headway (Hd)	5.203	4.497	5.328	4.571	4.572
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	689	794	0	783	786
Service Time	2.942	2.237	3.382	2.607	2.605
HCM Lane V/C Ratio	0.131	0.057	0	0.189	0.472
HCM Control Delay	8.7	7.5	8.4	8.7	11.6
HCM Lane LOS	A	A	N	A	B
HCM 95th-tile Q	0.4	0.2	0	0.7	2.5

Intersection	
Intersection Delay, s/veh	39.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	1
Future Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	167	188	156	0	0	0	94	63	167	333	177	1
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	43.1	18.6	48.1
HCM LOS	E	C	E

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	33%	65%
Vol Thru, %	19%	37%	35%
Vol Right, %	52%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	490	491
LT Vol	90	160	320
Through Vol	60	180	170
RT Vol	160	150	1
Lane Flow Rate	323	510	511
Geometry Grp	1	1	1
Degree of Util (X)	0.587	0.903	0.927
Departure Headway (Hd)	6.54	6.367	6.525
Convergence, Y/N	Yes	Yes	Yes
Cap	549	567	552
Service Time	4.603	4.416	4.581
HCM Lane V/C Ratio	0.588	0.899	0.926
HCM Control Delay	18.6	43.1	48.1
HCM Lane LOS	C	E	E
HCM 95th-tile Q	3.8	10.8	11.5

Year 2050A + P1 AM | Old Town Complex

29: Washington St & San Diego Ave | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	810	0	0	883	680
Future Volume (veh/h)	0	0	0	200	370	80	300	810	0	0	883	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	853	0	0	929	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	853	0	0	929	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	16.8	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	16.8	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.36	0.00	0.00	0.60	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.78	0.78	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	17.8	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.6	0.3	0.0	0.0	1.7	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	6.8	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.3	0.0	0.0	19.5	74.2
LnGrp LOS				C	C	C	C	A	A	A	B	F
Approach Vol, veh/h					684			1169			1645	
Approach Delay, s/veh					31.5			6.9			43.3	
Approach LOS					C			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0				
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9				
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1				
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9				
Green Ext Time (p_c), s		9.1			0.0	0.0		2.4				
Intersection Summary												
HCM 6th Ctrl Delay			28.8									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P1 AM | Old Town Complex

30: Washington St & Hancock St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	510	160	460	623	0
Future Volume (veh/h)	600	380	240	0	0	0	0	510	160	460	623	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	526	165	474	642	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	526	165	474	642	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	11.5	7.8	11.3	9.4	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	11.5	7.8	11.3	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.46	0.33	0.85	0.37	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.96	0.96	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	18.3	17.2	34.2	7.9	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	1.3	1.7	6.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	3.8	2.3	5.1	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	19.6	18.9	40.5	8.4	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		1258						691			1116	
Approach Delay, s/veh		31.3						19.4			22.0	
Approach LOS		C						B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1						
Max Q Clear Time (g_c+I1), s	13.3	13.5		18.6		11.4						
Green Ext Time (p_c), s	0.4	3.9		2.5		5.6						
Intersection Summary												
HCM 6th Ctrl Delay			25.3									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	470	0	0	720	143
Future Volume (veh/h)	30	0	70	60	50	170	140	470	0	0	720	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	490	0	0	750	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	288	177	1496	0	0	1028	444
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.36	0.36
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	490	0	0	750	149
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.7	0.0	0.0	15.7	6.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.7	0.0	0.0	15.7	6.0
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	288	177	1496	0	0	1028	444
V/C Ratio(X)	1.10	0.00	0.00	0.18	0.14	0.61	0.83	0.33	0.00	0.00	0.73	0.34
Avail Cap(c_a), veh/h	94	0	0	675	709	568	177	1890	0	0	1405	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	22.9	22.8	25.1	30.1	9.1	0.0	0.0	18.7	15.7
Incr Delay (d2), s/veh	123.7	0.0	0.0	0.1	0.1	0.8	27.0	0.0	0.0	0.0	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	0.8	0.7	2.5	3.6	1.8	0.0	0.0	4.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.8	0.0	0.0	23.0	22.8	25.9	57.0	9.1	0.0	0.0	20.2	16.2
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			636			899	
Approach Delay, s/veh		155.8			24.8			20.1			19.5	
Approach LOS		F			C			C			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		40.5		8.0	11.3	29.2		19.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0
Max Q Clear Time (g_c+I1), s		8.7		6.0	7.5	17.7		9.4
Green Ext Time (p_c), s		2.4		0.0	0.0	6.2		0.9

Intersection Summary		
HCM 6th Ctrl Delay		27.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	230	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	162	199	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	478	502	742				0	651	86	289	551	0
Arrive On Green	0.27	0.27	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	1767	1856	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	162	199	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	3.0	3.6	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	3.0	3.6	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	478	502	742				0	369	367	289	551	0
V/C Ratio(X)	0.34	0.40	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	1273	1337	1427				0	607	603	313	598	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.9	12.1	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.0				0.0	0.7	0.7	6.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.2	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	12.3	5.9				0.0	15.4	15.5	22.2	16.4	0.0
LnGrp LOS	B	B	A				A	B	B	C	B	A
Approach Vol, veh/h		450						478			489	
Approach Delay, s/veh		10.9						15.4			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.3		7.2
Max Q Clear Time (g_c+I1), s				7.1		5.6		6.3
Green Ext Time (p_c), s				1.1		1.1		0.3

Intersection Summary		
HCM 6th Ctrl Delay		15.2
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	141	250	393	100	80	400	140
Future Volume (veh/h)	90	200	100	410	700	141	250	393	100	80	400	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	162	287	452	115	92	460	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	552	550	191	534	107	131	889	217	111	828	276
Arrive On Green	0.06	0.36	0.36	0.13	0.43	0.43	0.07	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1767	1537	1531	1464	1236	249	1767	4008	977	1464	3704	1235
Grp Volume(v), veh/h	103	230	115	471	0	967	287	378	189	92	417	204
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1485	1767	1689	1608	1464	1689	1562
Q Serve(g_s), s	5.1	10.0	4.6	11.6	0.0	38.5	6.6	8.7	9.3	5.5	9.8	10.4
Cycle Q Clear(g_c), s	5.1	10.0	4.6	11.6	0.0	38.5	6.6	8.7	9.3	5.5	9.8	10.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.61	1.00		0.79
Lane Grp Cap(c), veh/h	101	552	550	191	0	642	131	749	357	111	755	349
V/C Ratio(X)	1.02	0.42	0.21	2.47	0.00	1.51	2.19	0.50	0.53	0.83	0.55	0.58
Avail Cap(c_a), veh/h	101	552	550	191	0	642	131	1110	529	133	1167	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	21.5	19.8	38.8	0.0	25.3	41.3	30.4	30.6	40.6	30.7	30.9
Incr Delay (d2), s/veh	94.6	0.2	0.1	677.7	0.0	236.2	561.0	1.0	2.3	25.5	1.1	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	3.5	1.6	40.0	0.0	54.7	23.2	3.6	3.7	2.7	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.6	21.7	19.9	716.5	0.0	261.5	602.2	31.4	32.9	66.1	31.8	33.6
LnGrp LOS	F	C	B	F	A	F	F	C	C	E	C	C
Approach Vol, veh/h		448			1438			854			713	
Approach Delay, s/veh		47.6			410.5			223.5			36.8	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	25.1	16.0	36.9	11.0	25.2	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	17.5	11.3	13.6	12.0	8.6	12.4	7.1	40.5
Green Ext Time (p_c), s	0.0	5.7	0.0	1.0	0.0	6.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	240.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	531	1140	100	80	1410	90	250	351	90	100	240	900
Future Volume (veh/h)	531	1140	100	80	1410	90	250	351	90	100	240	900
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	542	1163	102	82	1439	92	255	358	92	102	245	918
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1096	70	134	992	243	124	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3359	214	1767	4029	987	1767	5066	1520
Grp Volume(v), veh/h	542	626	639	82	752	779	255	297	153	102	245	918
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1810	1767	1689	1638	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.2	10.8	8.0	5.4	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.2	10.8	8.0	5.4	33.7
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	591	134	832	404	124	1219	710
V/C Ratio(X)	1.40	0.73	0.73	0.80	1.31	1.32	1.91	0.36	0.38	0.82	0.20	1.29
Avail Cap(c_a), veh/h	386	859	875	121	575	591	134	832	404	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	43.6	43.9	64.2	42.4	38.1
Incr Delay (d2), s/veh	196.4	3.5	3.5	23.2	150.6	154.8	434.2	1.2	2.7	14.5	0.4	142.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.7	17.4	17.8	3.6	44.0	45.8	20.9	4.4	4.8	4.1	2.3	51.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	251.1	32.0	32.0	88.4	197.7	202.0	498.9	44.8	46.5	78.7	42.8	180.6
LnGrp LOS	F	C	C	F	F	F	F	D	D	E	D	F
Approach Vol, veh/h		1807			1613			705			1265	
Approach Delay, s/veh		97.7			194.2			209.4			145.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	39.8	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.0	12.8	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.3	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1401	2530	2930	81	60	100
Future Volume (veh/h)	1401	2530	2930	81	60	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1506	2720	3151	0	65	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4179	2758		152	135
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1506	2720	3151	0	65	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	4.1	8.0
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	4.1	8.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4179	2758		152	135
V/C Ratio(X)	1.81	0.65	1.14		0.43	0.80
Avail Cap(c_a), veh/h	834	4179	2758		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.2	52.9
Incr Delay (d2), s/veh	367.5	0.8	69.0	0.0	0.7	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	54.6	5.9	41.9	0.0	1.9	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	412.2	4.7	95.9	0.0	51.9	56.9
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4226	3151	A	173	
Approach Delay, s/veh		149.9	95.9		55.0	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		10.0	30.7	66.2
Green Ext Time (p_c), s		51.1		0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	125.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	71	120	110	150	120	260	1180	83	193	790	240
Future Volume (veh/h)	90	71	120	110	150	120	260	1180	83	193	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	74	125	115	156	125	271	1229	86	201	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	238	190	98	254	201	365	1357	95	244	1544	762
Arrive On Green	0.05	0.13	0.13	0.06	0.14	0.14	0.11	0.41	0.41	0.14	0.44	0.44
Sat Flow, veh/h	3428	1856	1485	1767	1856	1468	3428	3337	233	1767	3526	1570
Grp Volume(v), veh/h	94	74	125	115	156	125	271	648	667	201	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1485	1767	1856	1468	1714	1763	1807	1767	1763	1570
Q Serve(g_s), s	1.9	2.6	5.8	4.0	5.7	5.8	5.5	24.9	25.0	8.0	12.3	7.0
Cycle Q Clear(g_c), s	1.9	2.6	5.8	4.0	5.7	5.8	5.5	24.9	25.0	8.0	12.3	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	161	238	190	98	254	201	365	717	735	244	1544	762
V/C Ratio(X)	0.58	0.31	0.66	1.17	0.62	0.62	0.74	0.90	0.91	0.83	0.53	0.33
Avail Cap(c_a), veh/h	228	798	638	98	767	607	528	728	747	392	1701	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	28.5	29.9	34.1	29.3	29.4	31.3	20.1	20.1	30.2	14.9	11.4
Incr Delay (d2), s/veh	1.2	0.7	3.8	144.9	0.9	1.2	1.5	15.1	15.1	3.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	2.1	5.5	2.4	1.9	2.2	11.8	12.1	3.4	4.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	29.3	33.7	178.9	30.2	30.6	32.7	35.1	35.2	33.7	15.3	11.8
LnGrp LOS	C	C	C	F	C	C	C	D	D	C	B	B
Approach Vol, veh/h		293			396			1586			1274	
Approach Delay, s/veh		33.0			73.5			34.8			17.5	
Approach LOS		C			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	34.6	8.4	14.7	12.1	36.9	7.8	15.4
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	10.0	27.0	6.0	7.8	7.5	14.3	3.9	7.8
Green Ext Time (p_c), s	0.1	2.3	0.0	0.8	0.2	9.3	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1290	100	370	411	0	0	0	0	190	0	813
Future Volume (veh/h)	0	1290	100	370	411	0	0	0	0	190	0	813
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1402	109	402	447	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1402	109	402	447	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	27.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.61	0.11	1.19	0.16	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.26	0.26	0.70	0.70	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.9	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.1	105.6	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.6	1.0	9.4	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	7.8	153.8	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1511			849						207	A
Approach Delay, s/veh		11.9			72.9						55.5	
Approach LOS		B			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0
Max Q Clear Time (g_c+I1), s	13.8	29.4		15.8		2.0
Green Ext Time (p_c), s	0.0	5.8		0.1		2.0

Intersection Summary			
HCM 6th Ctrl Delay			35.6
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	930	550	0	0	481	310	300	10	440	0	0	0
Future Volume (veh/h)	930	550	0	0	481	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	969	573	0	0	501	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1212	2365	0	0	548	352	420	13	385			
Arrive On Green	0.59	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2111	1297	1715	55	1572			
Grp Volume(v), veh/h	969	573	0	0	437	387	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1552	1770	0	1572			
Q Serve(g_s), s	26.3	0.0	0.0	0.0	28.9	29.0	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	26.3	0.0	0.0	0.0	28.9	29.0	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.84	0.97		1.00			
Lane Grp Cap(c), veh/h	1212	2365	0	0	479	421	434	0	385			
V/C Ratio(X)	0.80	0.24	0.00	0.00	0.91	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1212	2365	0	0	521	459	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.3	0.0	0.0	0.0	42.4	42.4	41.8	0.0	45.3			
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	24.5	27.4	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	0.0	15.6	14.1	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	0.0	0.0	66.8	69.8	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1542			824			780				
Approach Delay, s/veh		13.6			68.2			109.8				
Approach LOS		B			E			F				

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		34.0	47.9	38.1
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36
Max Q Clear Time (g_c+I1), s		2.0		31.4	28.3	31.0
Green Ext Time (p_c), s		2.7		0.0	3.3	1.6

Intersection Summary			
HCM 6th Ctrl Delay			51.8
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	731	10	1090	1010	0	401
Future Volume (veh/h)	731	10	1090	1010	0	401
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	796	0	1172	0	0	431
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	930	424	1688		0	1688
Arrive On Green	0.26	0.00	0.48	0.00	0.00	0.48
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	796	0	1172	0	0	431
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	11.8	0.0	14.3	0.0	0.0	4.0
Cycle Q Clear(g_c), s	11.8	0.0	14.3	0.0	0.0	4.0
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	930	424	1688		0	1688
V/C Ratio(X)	0.86	0.00	0.69		0.00	0.26
Avail Cap(c_a), veh/h	983	448	1688		0	1688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	11.2	0.0	0.0	8.5
Incr Delay (d2), s/veh	7.5	0.0	2.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	5.0	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	0.0	13.6	0.0	0.0	8.9
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	796		1172	A		431
Approach Delay, s/veh	26.7		13.6			8.9
Approach LOS	C		B			A

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		31.8				31.8	23.2
Change Period (Y+Rc), s		5.5				* 5.5	8.7
Max Green Setting (Gmax), s		25.5				* 26	15.3
Max Q Clear Time (g_c+I1), s		16.3				6.0	13.8
Green Ext Time (p_c), s		6.3				4.5	0.7

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	610
Future Volume (vph)	290	560	120	90	270	610
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	678

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	678
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	678
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.60
Capacity (veh/h)	552	608	598	547	1118
Control Delay (s)	16.9	68.7	12.4	16.8	10.9
Approach Delay (s)	51.0		12.4	12.7	
Approach LOS	F		B	B	

Intersection Summary			
Delay	29.4		
Level of Service	D		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	744	560	470	260	290	41
Future Volume (veh/h)	744	560	470	260	290	41
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	800	602	505	0	312	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	831	1348	721		410	928
Arrive On Green	0.47	0.73	0.20	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	800	602	505	0	312	44
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	35.6	10.7	10.8	0.0	7.2	1.0
Cycle Q Clear(g_c), s	35.6	10.7	10.8	0.0	7.2	1.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	831	1348	721		410	928
V/C Ratio(X)	0.96	0.45	0.70		0.76	0.05
Avail Cap(c_a), veh/h	886	1722	1322		927	1165
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	4.5	30.0	0.0	34.7	7.0
Incr Delay (d2), s/veh	20.5	0.1	0.5	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	3.0	4.5	0.0	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.3	4.6	30.5	0.0	35.8	7.0
LnGrp LOS	D	A	C		D	A
Approach Vol, veh/h		1402	505	A	356	
Approach Delay, s/veh		25.5	30.5		32.2	
Approach LOS		C	C		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.1		16.2	42.5	22.6
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		12.7		9.2	37.6	12.8
Green Ext Time (p_c), s		2.8		0.6	0.6	2.1

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	440	0	0	20	652	994	5	10	371	100
Future Volume (veh/h)	330	30	440	0	0	20	652	994	5	10	371	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	489				724	1104	6	11	412	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	792	0	964				1377	2168	12	19	560	149
Arrive On Green	0.22	0.00	0.22				0.80	1.00	1.00	0.01	0.21	0.21
Sat Flow, veh/h	3534	0	1485				3428	3594	20	1767	2712	721
Grp Volume(v), veh/h	391	0	489				724	541	569	11	266	257
Grp Sat Flow(s),veh/h/ln	1767	0	1485				1714	1763	1851	1767	1763	1670
Q Serve(g_s), s	8.7	0.0	0.0				6.5	0.0	0.0	0.6	12.7	13.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0				6.5	0.0	0.0	0.6	12.7	13.0
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.43
Lane Grp Cap(c), veh/h	792	0	964				1377	1063	1116	19	364	345
V/C Ratio(X)	0.49	0.00	0.51				0.53	0.51	0.51	0.58	0.73	0.75
Avail Cap(c_a), veh/h	1178	0	1127				1377	1063	1116	100	460	436
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.39	0.39	0.39	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	9.1				5.9	0.0	0.0	44.3	33.4	33.5
Incr Delay (d2), s/veh	0.8	0.0	0.7				0.1	0.7	0.7	10.1	12.2	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	12.4				1.6	0.2	0.2	0.3	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	9.8				6.0	0.7	0.7	54.4	45.5	47.2
LnGrp LOS	C	A	A				A	A	A	D	D	D
Approach Vol, veh/h		880						1834			534	
Approach Delay, s/veh		19.3						2.8			46.5	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.4	59.2		25.5	41.1	23.5
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.7	8.5	15.0
Green Ext Time (p_c), s	0.0	10.6		6.1	1.4	2.6

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	90	10	310	10	1306	111	270	551	20
Future Volume (veh/h)	20	10	10	90	10	310	10	1306	111	270	551	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	94	10	323	10	1360	116	281	574	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	184	87	68	133	28	348	17	1468	125	385	1815	66
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.01	0.31	0.31	0.22	0.52	0.52
Sat Flow, veh/h	401	282	220	274	90	1129	1767	4723	403	1767	3463	127
Grp Volume(v), veh/h	41	0	0	427	0	0	10	972	504	281	292	303
Grp Sat Flow(s),veh/h/ln	903	0	0	1493	0	0	1767	1689	1749	1767	1763	1826
Q Serve(g_s), s	0.0	0.0	0.0	20.6	0.0	0.0	0.5	25.1	25.1	13.3	8.5	8.5
Cycle Q Clear(g_c), s	1.5	0.0	0.0	24.9	0.0	0.0	0.5	25.1	25.1	13.3	8.5	8.5
Prop In Lane	0.51		0.24	0.22		0.76	1.00		0.23	1.00		0.07
Lane Grp Cap(c), veh/h	339	0	0	509	0	0	17	1050	543	385	924	958
V/C Ratio(X)	0.12	0.00	0.00	0.84	0.00	0.00	0.58	0.93	0.93	0.73	0.32	0.32
Avail Cap(c_a), veh/h	372	0	0	548	0	0	102	1054	546	385	924	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.51	0.51	0.51	0.85	0.85	0.85
Uniform Delay (d), s/veh	22.1	0.0	0.0	30.0	0.0	0.0	44.4	30.0	30.0	32.7	12.2	12.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	9.7	0.0	0.0	5.6	8.7	14.7	5.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	10.0	0.0	0.0	0.2	11.1	12.4	6.1	3.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	0.0	39.8	0.0	0.0	50.0	38.7	44.7	37.9	13.0	12.9
LnGrp LOS	C	A	A	D	A	A	D	D	D	D	B	B
Approach Vol, veh/h		41			427			1486			876	
Approach Delay, s/veh		22.1			39.8			40.9			21.0	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.5	32.9		32.6	5.3	52.1		32.6
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.3	27.1		3.5	2.5	10.5		26.9
Green Ext Time (p_c), s	0.1	0.9		0.1	0.0	5.3		0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1097	190	200	501	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1097	190	200	501	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1143	198	208	522	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1345	233	164	1582	0	470	0	412	0	497	0
Arrive On Green	0.00	0.40	0.40	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3456	575	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	914	427	208	522	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1241	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	18.9	18.9	5.6	6.0	0.0	9.4	0.0	12.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.9	18.9	5.6	6.0	0.0	9.4	0.0	12.7	0.0	0.0	0.0
Prop In Lane	0.00		0.46	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1075	502	164	1582	0	470	0	412	0	497	0
V/C Ratio(X)	0.00	0.85	0.85	1.27	0.33	0.00	0.49	0.00	0.83	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1104	516	164	1612	0	772	0	766	0	952	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.3	16.3	27.4	6.9	0.0	19.6	0.0	20.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.3	12.5	160.7	0.0	0.0	0.3	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	6.4	9.5	1.4	0.0	2.6	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.6	28.9	188.1	6.9	0.0	19.9	0.0	22.6	0.0	0.0	0.0
LnGrp LOS	A	C	C	F	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1341			730			573			0	
Approach Delay, s/veh		24.6			58.6			21.5			0.0	
Approach LOS		C			E			C				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	29.3		21.1		39.3		21.1
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	7.6	20.9		0.0		8.0		14.7
Green Ext Time (p_c), s	0.0	3.0		0.0		2.5		1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	640	190	331	390	100	260	414	607	200	361	200
Future Volume (veh/h)	143	640	190	331	390	100	260	414	607	200	361	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	152	681	202	352	415	106	277	440	646	213	384	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	152	681	202	352	415	106	277	440	646	213	384	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	11.1	30.4	16.1	16.8	34.9	9.1	14.8	13.2	36.8	16.0	11.2	16.1
Cycle Q Clear(g_c), s	11.1	30.4	16.1	16.8	34.9	9.1	14.8	13.2	36.8	16.0	11.2	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	0.94	0.88	0.40	0.98	0.89	0.29	1.37	0.44	1.32	1.24	0.37	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	44.7	28.8	55.9	41.8	33.0	57.3	37.9	38.2	56.7	36.3	38.0
Incr Delay (d2), s/veh	53.8	11.6	0.6	40.7	17.5	0.2	195.3	0.3	156.7	147.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	11.7	4.7	7.8	14.8	2.5	17.6	5.8	36.6	12.5	4.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.3	56.4	29.4	96.6	59.2	33.2	252.6	38.2	194.8	203.9	36.4	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1035			873			1363			810	
Approach Delay, s/veh		59.3			71.1			156.0			81.0	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	18.8	32.4	16.8	18.1	13.1	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	1.8	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	98.4
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	70.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	943	610	290
Future Vol, veh/h	120	70	200	943	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1014	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1769	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 82	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	357	691	-	-	-
Mov Cap-2 Maneuver	~ 55	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 816.6	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	80	-	-
HCM Lane V/C Ratio	0.311	-	2.554	-	-
HCM Control Delay (s)	12.5	-	$ 816.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	420	370	2344	0	0	2490	470
Future Volume (veh/h)	0	0	0	140	660	420	370	2344	0	0	2490	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	506	446	2824	0	0	3000	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	499	332	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				381	1813	1206	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				814	0	656	446	2824	0	0	3000	566
Grp Sat Flow(s),veh/h/ln				1836	0	1564	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.21		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	430	150	3362	0	0	2792	836
V/C Ratio(X)				1.61	0.00	1.53	2.97	0.84	0.00	0.00	1.07	0.68
Avail Cap(c_a), veh/h				505	0	430	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.19	0.19	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				284.4	0.0	247.9	889.5	0.5	0.0	0.0	41.0	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				60.3	0.0	47.0	42.7	0.2	0.0	0.0	45.5	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				342.4	0.0	305.9	955.9	0.5	0.0	0.0	76.9	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1470			3270			3566	
Approach Delay, s/veh					326.1			130.8			69.5	
Approach LOS					F			F			E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2
Green Ext Time (p_c), s		18.0		0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		139.1
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2284	40	280	2230	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2284	40	280	2230	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2355	41	289	2299	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2623	46	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5292	89	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1550	846	289	2299	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1837	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	66.2	66.7	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	66.2	66.7	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	940	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.90	0.90	1.56	0.56	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	940	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	35.2	35.3	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	0.8	1.5	253.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	26.8	29.5	19.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	36.0	36.8	316.5	0.0	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2396			2588	
Approach Delay, s/veh		91.1						36.3			35.4	
Approach LOS		F						D			D	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	68.7	49.1	2.0
Green Ext Time (p_c), s	0.0	6.4	0.0	10.6

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	460	30	386	0	290	0	863	311	120	670	0
Future Volume (veh/h)	210	460	30	386	0	290	0	863	311	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	484	32	406	0	305	0	908	327	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	386	26	0	0	0	0	1581	564	304	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1709	113		0		0	2526	868	1767	3618	0
Grp Volume(v), veh/h	221	0	516		0.0		0	656	579	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1822				0	1763	1539	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	33.2	33.8	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	33.2	33.8	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	1000	304	2514	0
V/C Ratio(X)	0.55	0.00	1.25				0.00	0.57	0.58	0.41	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	1000	320	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	15.6	15.7	13.4	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	116.6				0.0	0.2	0.2	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	30.1				0.0	13.3	11.9	1.5	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	178.6				0.0	15.8	15.9	13.8	8.5	0.0
LnGrp LOS	D	A	F				A	B	B	B	A	A
Approach Vol, veh/h		737						1235			831	
Approach Delay, s/veh		141.5						15.9			9.3	
Approach LOS		F						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	15.7	35.8	38.1	13.5
Green Ext Time (p_c), s	0.0	24.0	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	530	230	384	532	30	281	1754	510	0	1690	770
Future Volume (veh/h)	570	530	230	384	532	30	281	1754	510	0	1690	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	668	509	250	343	682	33	305	1907	554	0	1837	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	299	594	29	315	1911	526	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3506	170	3428	3916	1078	0	5233	1572
Grp Volume(v), veh/h	668	509	250	343	361	354	305	1630	831	0	1837	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1820	1714	1689	1617	0	1689	1572
Q Serve(g_s), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	53.1	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	53.1	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.67	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
V/C Ratio(X)	0.82	1.18	0.72	1.15	1.15	1.15	0.97	0.99	1.05	0.00	1.00	
Avail Cap(c_a), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	0.26	0.26	0.26	0.00	0.80	0.00
Uniform Delay (d), s/veh	58.2	61.5	56.7	75.5	75.5	75.5	65.1	1.6	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	6.0	103.8	6.4	89.0	88.8	89.7	18.6	9.0	32.4	0.0	18.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	29.9	10.0	20.4	21.4	21.1	6.4	2.8	7.8	0.0	27.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	165.3	63.2	164.5	164.3	165.2	83.6	10.6	34.3	0.0	69.9	0.0
LnGrp LOS	E	F	E	F	F	F	F	B	F	A	F	
Approach Vol, veh/h		1427			1058			2766			1837	A
Approach Delay, s/veh		100.1			164.7			25.8			69.9	
Approach LOS		F			F			C			E	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.1	60.0		29.1
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		72.9
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	490	190	181	691	315	260	1710	130	421	1272	161
Future Volume (veh/h)	370	490	190	181	691	315	260	1710	130	421	1272	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	394	521	202	193	735	335	277	1819	138	448	1353	171
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	602	257	277	734	311	317	1912	145	501	2069	261
Arrive On Green	0.12	0.17	0.17	0.16	0.21	0.21	0.09	0.40	0.40	0.29	0.91	0.91
Sat Flow, veh/h	3428	3526	1505	1767	3526	1493	3428	4794	362	3428	4540	574
Grp Volume(v), veh/h	394	521	202	193	735	335	277	1280	677	448	1006	518
Grp Sat Flow(s),veh/h/ln	1714	1763	1505	1767	1763	1493	1714	1689	1779	1714	1689	1736
Q Serve(g_s), s	18.2	23.0	16.8	16.5	33.3	24.4	12.8	58.7	59.1	20.0	10.5	10.5
Cycle Q Clear(g_c), s	18.2	23.0	16.8	16.5	33.3	24.4	12.8	58.7	59.1	20.0	10.5	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.33
Lane Grp Cap(c), veh/h	420	602	257	277	734	311	317	1347	710	501	1539	791
V/C Ratio(X)	0.94	0.87	0.79	0.70	1.00	1.08	0.87	0.95	0.95	0.89	0.65	0.65
Avail Cap(c_a), veh/h	420	729	311	277	734	311	334	1391	733	501	1539	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.58	0.58	0.58	0.12	0.12	0.12
Uniform Delay (d), s/veh	69.6	64.6	42.6	63.9	63.4	33.9	71.7	46.5	46.7	55.4	4.3	4.3
Incr Delay (d2), s/veh	28.5	8.1	8.4	6.3	33.6	73.4	12.8	10.1	16.9	2.8	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	11.1	7.0	8.0	18.4	15.3	6.2	26.2	29.1	7.8	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.1	72.6	51.0	70.2	97.0	107.3	84.5	56.7	63.6	58.2	4.6	4.8
LnGrp LOS	F	E	D	E	F	F	F	E	E	E	A	A
Approach Vol, veh/h		1117			1263			2234			1972	
Approach Delay, s/veh		77.7			95.6			62.2			16.8	
Approach LOS		E			F			E			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.1	68.7	30.0	32.2	19.2	78.6	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	22.0	61.1	18.5	25.0	14.8	12.5	20.2	35.3
Green Ext Time (p_c), s	0.0	2.7	0.0	1.1	0.0	4.4	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		57.7
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	290	20	492	381	120	30	1570	660	160	1241	352
Future Volume (veh/h)	240	290	20	492	381	120	30	1570	660	160	1241	352
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	250	302	21	512	397	125	31	1635	688	167	1293	367
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	269	378	26	553	420	344	41	2206	669	210	1668	716
Arrive On Green	0.15	0.22	0.22	0.16	0.23	0.23	0.02	0.44	0.44	0.02	0.16	0.16
Sat Flow, veh/h	1767	1710	119	3428	1856	1518	1767	5066	1535	3428	3526	1513
Grp Volume(v), veh/h	250	0	323	512	397	125	31	1635	688	167	1293	367
Grp Sat Flow(s),veh/h/ln	1767	0	1829	1714	1856	1518	1767	1689	1535	1714	1763	1513
Q Serve(g_s), s	22.3	0.0	26.7	23.6	33.7	9.4	2.8	43.0	69.7	7.8	56.3	20.8
Cycle Q Clear(g_c), s	22.3	0.0	26.7	23.6	33.7	9.4	2.8	43.0	69.7	7.8	56.3	20.8
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	404	553	420	344	41	2206	669	210	1668	716
V/C Ratio(X)	0.93	0.00	0.80	0.93	0.94	0.36	0.75	0.74	1.03	0.80	0.77	0.51
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2206	669	249	1668	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	66.9	0.0	59.0	66.1	60.9	37.3	77.7	37.6	45.2	77.4	59.3	17.3
Incr Delay (d2), s/veh	28.3	0.0	8.1	10.8	17.7	0.1	9.9	2.3	42.5	8.6	2.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	13.4	11.2	18.0	3.6	1.4	18.2	34.2	3.8	27.4	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.2	0.0	67.1	76.9	78.6	37.5	87.6	39.9	87.6	86.0	61.9	19.1
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	B
Approach Vol, veh/h		573			1034			2354			1827	
Approach Delay, s/veh		79.4			72.8			54.5			55.5	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	75.4	30.2	40.2	8.1	81.4	29.3	41.1
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	19.8	71.7	25.6	28.7	4.8	58.3	24.3	35.7
Green Ext Time (p_c), s	0.0	0.0	0.3	0.5	0.0	2.7	0.1	0.6

Intersection Summary		
HCM 6th Ctrl Delay		60.5
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	950	190	450	883	140	450
Future Volume (veh/h)	950	190	450	883	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1044	209	495	970	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	975	194	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	2995	579	1767	3618	373	1199
Grp Volume(v), veh/h	632	621	495	970	650	0
Grp Sat Flow(s),veh/h/ln	1763	1719	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	16.1	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	16.1	32.1	0.0
Prop In Lane		0.34	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	577	432	2173	457	0
V/C Ratio(X)	1.07	1.08	1.15	0.45	1.42	0.00
Avail Cap(c_a), veh/h	592	577	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.2	39.2	0.0
Incr Delay (d2), s/veh	56.7	59.3	89.8	0.1	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.9	24.7	22.4	6.0	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	93.4	96.0	131.6	11.4	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1253			1465	650	
Approach Delay, s/veh	94.7			52.0	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	42.5				73.5		37.0
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	27.0	* 37				67.6		32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1				18.1		34.1
Green Ext Time (p_c), s	0.0	0.0				9.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		104.4
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	311	872	30	0	1028
Future Vol, veh/h	0	311	872	30	0	1028
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	321	899	31	0	1060

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	485	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	525	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	515	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	515	-
HCM Lane V/C Ratio	-	-	0.623	-
HCM Control Delay (s)	-	-	22.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.2	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1300	1341	902	926	102
Future Volume (veh/h)	0	1300	1341	902	926	102
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1340	1382	930	955	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1644	1644	1231	1147	
Arrive On Green	0.00	0.47	0.47	0.47	0.33	0.00
Sat Flow, veh/h	0	3711	3618	1512	3428	1572
Grp Volume(v), veh/h	0	1340	1382	930	955	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1512	1714	1572
Q Serve(g_s), s	0.0	17.4	18.3	16.9	13.7	0.0
Cycle Q Clear(g_c), s	0.0	17.4	18.3	16.9	13.7	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1644	1644	1231	1147	
V/C Ratio(X)	0.00	0.82	0.84	0.76	0.83	
Avail Cap(c_a), veh/h	0	1683	1683	1248	1546	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.2	12.5	2.7	16.3	0.0
Incr Delay (d2), s/veh	0.0	3.1	3.9	2.6	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	6.6	12.0	5.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	15.4	16.4	5.4	19.0	0.0
LnGrp LOS	A	B	B	A	B	
Approach Vol, veh/h		1340	2312		955	A
Approach Delay, s/veh		15.4	12.0		19.0	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.2		23.0		30.2
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		19.4		15.7		20.3
Green Ext Time (p_c), s		4.2		2.1		4.5

Intersection Summary			
HCM 6th Ctrl Delay			14.4
HCM 6th LOS			B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	90	5	60	90	972	30	50	712	110
Future Volume (veh/h)	80	0	100	90	5	60	90	972	30	50	712	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	102	6	68	102	1105	34	57	809	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	236	36	194	480	30	337	129	1942	60	80	1574	241
Arrive On Green	0.24	0.00	0.24	0.24	0.24	0.24	0.07	0.39	0.39	0.05	0.36	0.36
Sat Flow, veh/h	498	152	814	1258	125	1417	1767	5042	155	1767	4401	674
Grp Volume(v), veh/h	205	0	0	102	0	74	102	740	399	57	619	315
Grp Sat Flow(s),veh/h/ln	1464	0	0	1258	0	1542	1767	1689	1820	1767	1689	1698
Q Serve(g_s), s	3.1	0.0	0.0	0.0	0.0	1.7	2.5	7.6	7.7	1.4	6.4	6.5
Cycle Q Clear(g_c), s	5.3	0.0	0.0	2.6	0.0	1.7	2.5	7.6	7.7	1.4	6.4	6.5
Prop In Lane	0.44		0.56	1.00		0.92	1.00		0.09	1.00		0.40
Lane Grp Cap(c), veh/h	465	0	0	480	0	367	129	1301	701	80	1208	607
V/C Ratio(X)	0.44	0.00	0.00	0.21	0.00	0.20	0.79	0.57	0.57	0.71	0.51	0.52
Avail Cap(c_a), veh/h	1153	0	0	1092	0	1117	215	1645	886	267	1736	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	0.0	13.9	0.0	13.5	20.2	10.7	10.7	20.9	11.2	11.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	4.0	0.5	1.0	4.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.7	0.0	0.5	1.1	2.3	2.6	0.6	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	14.0	0.0	13.6	24.3	11.3	11.7	25.1	11.6	12.0
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		205			176			1241			991	
Approach Delay, s/veh		15.1			13.8			12.5			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	22.5		15.4	7.6	21.3		15.4
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.4	9.7		7.3	4.5	8.5		4.6
Green Ext Time (p_c), s	0.0	7.0		0.9	0.0	6.1		0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	91.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	641	446	852	912	30
Future Vol, veh/h	0	641	446	852	912	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	675	469	897	960	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	516	1002	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 429	~ 388	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 421	~ 384	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 305.9	52.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 384	-	421	-	-
HCM Lane V/C Ratio	1.223	-	1.603	-	-
HCM Control Delay (s)	152	-	$ 305.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	19.6	-	38.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	74.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	561	0	1273	1487	100
Future Vol, veh/h	0	561	0	1273	1487	100
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	578	0	1312	1533	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	839	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 307	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 301	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 455.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	301	-	-
HCM Lane V/C Ratio	-	1.921	-	-
HCM Control Delay (s)	-	$ 455.2	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	40.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	20	120	150	60	110	280	983	20	21	1916	111
Future Volume (veh/h)	180	20	120	150	60	110	280	983	20	21	1916	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	200	22	133	167	67	122	311	1092	22	23	2129	123
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1628	698	30	1251	71
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.02	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3381	193
Grp Volume(v), veh/h	200	22	133	167	67	122	311	1092	22	23	1097	1155
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1811
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	33.8	1.1	1.8	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	33.8	1.1	1.8	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1628	698	30	652	670
V/C Ratio(X)	1.49	0.05	0.34	0.87	0.13	0.34	1.52	0.67	0.03	0.77	1.68	1.72
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1628	698	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	29.4	20.6	68.5	44.1	44.1
Incr Delay (d2), s/veh	257.7	0.0	0.2	14.2	0.0	0.2	257.7	1.2	0.0	14.3	313.5	332.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	0.6	3.9	6.6	1.8	3.4	21.9	14.5	0.4	0.9	79.2	84.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	322.4	40.3	43.6	75.7	37.8	40.5	319.6	30.5	20.6	82.8	357.6	376.0
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	F	F
Approach Vol, veh/h		355			356			1425			2275	
Approach Delay, s/veh		200.5			56.5			93.5			364.2	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	73.3	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	3.8	35.8	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	10.8	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	238.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2882.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2306	1932	1283	1996	190
Future Vol, veh/h	0	2306	1932	1283	1996	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2562	2147	1426	2218	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1129	2439	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 196	~ 187	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 192	~ 185	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 5599.2	$ 2894.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 185	-	192	-	-
HCM Lane V/C Ratio	11.604	-	13.345	-	-
HCM Control Delay (s)	$ 4817.3	-	$ 5599.2	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	248.4	-	299.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	280	230	350	10	491	60	270	10	130	50
Future Volume (veh/h)	10	150	280	230	350	10	491	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	295	242	368	11	517	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	194	361	203	629	19	490	48	217	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	551	1028	920	1789	53	814	99	447	33	1267	465
Grp Volume(v), veh/h	11	0	453	242	0	379	864	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1579	920	0	1843	1360	0	0	1765	0	0
Q Serve(g_s), s	0.6	0.0	15.7	5.4	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	15.7	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.60		0.33	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
V/C Ratio(X)	0.04	0.00	0.82	1.19	0.00	0.58	1.14	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	17.7	28.9	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	9.8	123.6	0.0	1.4	80.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.5	9.8	0.0	4.0	26.5	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	27.5	152.4	0.0	17.3	96.9	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		464			621			864			201	
Approach Delay, s/veh		27.3			70.0			96.9			9.0	
Approach LOS		C			E			F			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		34.0		26.0		34.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		21.1		29.1		21.1		29.1				
Max Q Clear Time (g_c+I1), s		17.7		6.0		23.1		31.1				
Green Ext Time (p_c), s		1.4		0.8		0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		65.9
HCM 6th LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	555	531	50	0	510	280
Future Volume (veh/h)	5	10	30	80	190	310	555	531	50	0	510	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	603	577	54	0	554	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1060	99	0	358	197
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1665	156	0	1116	612
Grp Volume(v), veh/h	49	0	0	631	0	0	603	0	631	0	0	858
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1821	0	0	1728
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.09	0.00		0.35
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	1.31	0.00	0.54	0.00	0.00	1.55
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.1	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	155.5	0.0	0.3	0.0	0.0	254.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	28.3	0.0	5.1	0.0	0.0	49.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	185.1	0.0	8.4	0.0	0.0	281.7
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1234			858	
Approach Delay, s/veh		23.8			251.2			94.7			281.7	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2				
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3				
Max Q Clear Time (g_c+I1), s		17.4		3.9	22.8	27.7		21.3				
Green Ext Time (p_c), s		3.0		0.1	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			186.9
HCM 6th LOS			F

Intersection	
Intersection Delay, s/veh	102.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	352	0	606	260	0
Future Vol, veh/h	530	352	0	606	260	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	391	0	673	289	0
Number of Lanes	1	1	0	1	1	0

Approach	EB		NB	SB
Opposing Approach			SB	NB
Opposing Lanes	0		1	1
Conflicting Approach Left	SB		EB	
Conflicting Lanes Left	1		2	0
Conflicting Approach Right	NB			EB
Conflicting Lanes Right	1		0	2
HCM Control Delay	101.9		137.5	20.1
HCM LOS	F		F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	606	530	352	260
LT Vol	0	530	0	0
Through Vol	606	0	0	260
RT Vol	0	0	352	0
Lane Flow Rate	673	589	391	289
Geometry Grp	2	7	7	2
Degree of Util (X)	1.219	1.247	0.698	0.565
Departure Headway (Hd)	6.791	8.096	6.863	7.656
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	453	532	474
Service Time	4.791	5.796	4.563	5.656
HCM Lane V/C Ratio	1.249	1.3	0.735	0.61
HCM Control Delay	137.5	153.7	23.9	20.1
HCM Lane LOS	F	F	C	C
HCM 95th-tile Q	24.4	22.8	5.4	3.4

Intersection	
Intersection Delay, s/veh	76.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	272	60	110	20	451	5	221	10	5	5
Future Vol, veh/h	10	400	272	60	110	20	451	5	221	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	286	63	116	21	475	5	233	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	30	16	143	11.8
HCM LOS	D	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	67%	2%	0%	32%	50%
Vol Thru, %	1%	98%	0%	58%	25%
Vol Right, %	33%	0%	100%	11%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	677	410	272	190	20
LT Vol	451	10	0	60	10
Through Vol	5	400	0	110	5
RT Vol	221	0	272	20	5
Lane Flow Rate	713	432	286	200	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.239	0.84	0.5	0.397	0.046
Departure Headway (Hd)	6.258	7.652	6.919	7.893	8.415
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	584	479	524	460	428
Service Time	4.283	5.352	4.619	5.893	6.415
HCM Lane V/C Ratio	1.221	0.902	0.546	0.435	0.049
HCM Control Delay	143	39.1	16.3	16	11.8
HCM Lane LOS	F	E	C	C	B
HCM 95th-tile Q	27	8.3	2.8	1.9	0.1

Intersection	
Intersection Delay, s/veh	133.8
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	617	145	192
Future Vol, veh/h	60	70	200	617	145	192
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	752	177	234
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.8	201.9	15.6
HCM LOS	B	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	24%	100%	0%	0%
Vol Thru, %	76%	0%	0%	43%
Vol Right, %	0%	0%	100%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	817	60	70	337
LT Vol	200	60	0	0
Through Vol	617	0	0	145
RT Vol	0	0	70	192
Lane Flow Rate	996	73	85	411
Geometry Grp	2	7	7	2
Degree of Util (X)	1.394	0.154	0.151	0.574
Departure Headway (Hd)	5.036	8.383	7.146	5.491
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	430	505	662
Service Time	3.101	6.083	4.846	3.491
HCM Lane V/C Ratio	1.389	0.17	0.168	0.621
HCM Control Delay	201.9	12.6	11.1	15.6
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	43.3	0.5	0.5	3.7

Intersection	
Intersection Delay, s/veh	27.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	397	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	0	397	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	0	473	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	26	33	15.7
HCM LOS	-	D	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	2%	26%
Vol Thru, %	100%	0%	100%	0%	74%
Vol Right, %	0%	100%	0%	98%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	407	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	0	160
RT Vol	0	250	0	397	0
Lane Flow Rate	500	298	0	485	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.907	0.481	0	0.775	0.474
Departure Headway (Hd)	6.533	5.819	7.898	5.759	6.672
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	550	616	0	625	537
Service Time	4.312	3.597	5.898	3.824	4.757
HCM Lane V/C Ratio	0.909	0.484	0	0.776	0.477
HCM Control Delay	44.4	13.9	10.9	26	15.7
HCM Lane LOS	E	B	N	D	C
HCM 95th-tile Q	10.8	2.6	0	7.3	2.5

Intersection	
Intersection Delay, s/veh	122.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	161	240	150	0	0	0	150	120	250	330	140	110
Future Vol, veh/h	161	240	150	0	0	0	150	120	250	330	140	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	177	264	165	0	0	0	165	132	275	363	154	121
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	116.1	94.4	152.6
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	29%	57%
Vol Thru, %	23%	44%	24%
Vol Right, %	48%	27%	19%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	551	580
LT Vol	150	161	330
Through Vol	120	240	140
RT Vol	250	150	110
Lane Flow Rate	571	605	637
Geometry Grp	1	1	1
Degree of Util (X)	1.087	1.153	1.248
Departure Headway (Hd)	7.64	7.477	7.667
Convergence, Y/N	Yes	Yes	Yes
Cap	480	490	478
Service Time	5.64	5.477	5.667
HCM Lane V/C Ratio	1.19	1.235	1.333
HCM Control Delay	94.4	116.1	152.6
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.7	19.7	23.8

Year 2050A + P1 PM | Old Town Complex
29: Washington St & San Diego Ave | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2024	0	0	600	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2024	0	0	600	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2131	0	0	632	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2131	0	0	632	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.5	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.5	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.87	0.00	0.00	0.36	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	13.4	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.5	0.0	0.0	0.6	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.2	0.0	0.0	3.7	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.5	0.0	0.0	14.0	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2615			1348	
Approach Delay, s/veh					32.0			7.1			29.3	
Approach LOS					C			A			C	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	64.4	17.0	47.4	21.6
Change Period (Y+Rc), s	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	50.1	12.6	33.1	26.1
Max Q Clear Time (g_c+I1), s	2.0	14.0	40.3	11.9
Green Ext Time (p_c), s	35.9	0.0	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Year 2050A + P1 PM | Old Town Complex
30: Washington St & Hancock St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1144	170	300	510	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1144	170	300	510	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1179	175	309	526	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1179	175	309	526	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	9.8	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	9.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.19	0.42	0.90	0.37	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.67	0.67	0.92	0.92	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	13.2	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	94.1	2.0	23.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	22.5	2.8	4.3	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	122.0	23.3	61.9	13.8	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1354			835	
Approach Delay, s/veh		43.7						109.3			31.6	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	13.0	35.0	38.0	48.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	8.6	30.1	33.1	43.1
Max Q Clear Time (g_c+I1), s	9.7	32.1	35.1	11.8
Green Ext Time (p_c), s	0.0	0.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	994	0	0	620	170
Future Volume (veh/h)	120	0	150	80	70	200	230	994	0	0	620	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1046	0	0	653	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	41	0	51	378	397	318	212	1470	0	0	953	408
Arrive On Green	0.06	0.00	0.06	0.21	0.21	0.21	0.12	0.52	0.00	0.00	0.34	0.34
Sat Flow, veh/h	727	0	911	1767	1856	1485	1767	2897	0	0	2897	1208
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1046	0	0	653	179
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1485	1767	1411	0	0	1411	1208
Q Serve(g_s), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	20.0	0.0	0.0	14.1	8.2
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	20.0	0.0	0.0	14.1	8.2
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	92	0	0	378	397	318	212	1470	0	0	953	408
V/C Ratio(X)	3.08	0.00	0.00	0.22	0.19	0.66	1.14	0.71	0.00	0.00	0.69	0.44
Avail Cap(c_a), veh/h	92	0	0	648	680	544	212	1814	0	0	1281	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	0.0	23.0	22.8	25.5	31.2	12.9	0.0	0.0	20.2	18.3
Incr Delay (d2), s/veh	961.9	0.0	0.0	0.1	0.1	0.9	105.7	0.7	0.0	0.0	1.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.2	0.0	0.0	1.1	1.0	3.2	9.7	5.6	0.0	0.0	4.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	995.4	0.0	0.0	23.1	22.9	26.4	136.9	13.6	0.0	0.0	21.4	19.2
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	B
Approach Vol, veh/h		284			369			1288			832	
Approach Delay, s/veh		995.4			25.0			36.8			20.9	
Approach LOS		F			C			D			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.3		8.0	13.0	28.3		21.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		22.0		6.0	10.5	16.1		11.2
Green Ext Time (p_c), s		5.6		0.0	0.0	5.5		1.2

Intersection Summary	
HCM 6th Ctrl Delay	128.6
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	734	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	734	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	884	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1124	0	832				0	647	118	347	662	0
Arrive On Green	0.32	0.00	0.32				0.00	0.22	0.22	0.20	0.20	0.00
Sat Flow, veh/h	3534	0	1528				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	884	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1528				0	1763	1716	1767	1689	0
Q Serve(g_s), s	12.4	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Cycle Q Clear(g_c), s	12.4	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1124	0	832				0	388	378	347	662	0
V/C Ratio(X)	0.79	0.00	0.13				0.00	0.78	0.79	1.02	0.28	0.00
Avail Cap(c_a), veh/h	1996	0	1209				0	452	440	347	662	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.9	0.0	6.2				0.0	20.1	20.1	21.9	18.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0				0.0	6.3	7.0	53.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.8				0.0	4.0	4.0	9.2	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	6.3				0.0	26.4	27.1	75.8	18.9	0.0
LnGrp LOS	B	A	A				A	C	C	F	B	A
Approach Vol, veh/h		988						604			542	
Approach Delay, s/veh		16.2						26.7			56.1	
Approach LOS		B						C			E	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				16.0		23.5		15.0
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		30.8		10.7
Max Q Clear Time (g_c+I1), s				11.0		14.4		12.7
Green Ext Time (p_c), s				0.8		2.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

33: Pacific Hwy & Sassafras St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	110	270	550	70	241	1263	80
Future Volume (veh/h)	100	290	140	430	420	110	270	550	70	241	1263	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	112	276	561	71	246	1289	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	392	389	290	459	120	112	1084	135	183	1461	93
Arrive On Green	0.06	0.26	0.26	0.20	0.39	0.39	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	1767	1537	1522	1464	1168	305	1767	4529	563	1464	4857	309
Grp Volume(v), veh/h	102	296	143	439	0	541	276	416	216	246	896	475
Grp Sat Flow(s),veh/h/ln	1767	1537	1522	1464	0	1472	1767	1689	1715	1464	1689	1789
Q Serve(g_s), s	6.0	18.5	8.0	20.6	0.0	36.7	6.6	11.1	11.4	13.0	26.3	26.3
Cycle Q Clear(g_c), s	6.0	18.5	8.0	20.6	0.0	36.7	6.6	11.1	11.4	13.0	26.3	26.3
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.33	1.00		0.17
Lane Grp Cap(c), veh/h	107	392	389	290	0	578	112	808	410	183	1016	538
V/C Ratio(X)	0.95	0.75	0.37	1.51	0.00	0.94	2.46	0.51	0.53	1.34	0.88	0.88
Avail Cap(c_a), veh/h	107	473	468	290	0	655	112	824	419	183	1032	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	35.7	31.8	41.7	0.0	30.3	48.7	34.3	34.5	45.5	34.6	34.6
Incr Delay (d2), s/veh	71.4	4.2	0.2	248.6	0.0	19.6	684.0	1.0	2.1	187.1	9.5	16.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	7.3	3.0	27.4	0.0	15.7	24.2	4.6	5.0	14.2	11.9	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.1	40.0	32.1	290.4	0.0	49.9	732.8	35.3	36.5	232.6	44.1	50.8
LnGrp LOS	F	D	C	F	A	D	F	D	D	F	D	D
Approach Vol, veh/h		541			980			908			1617	
Approach Delay, s/veh		53.0			157.6			247.6			74.7	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.2	25.0	31.5	11.0	36.6	10.7	45.8
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	13.4	22.6	20.5	8.6	28.3	8.0	38.7
Green Ext Time (p_c), s	0.0	4.9	0.0	1.1	0.0	3.0	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	130.7
HCM 6th LOS	F

34: Pacific Hwy & Laurel St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	1810	180	130	1040	130	170	510	170	220	1111	911
Future Volume (veh/h)	490	1810	180	130	1040	130	170	510	170	220	1111	911
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	563	2080	207	149	1195	149	195	586	195	253	1277	1047
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	806	100	155	1580	512	276	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.42	0.42	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3142	390	1767	3760	1218	1767	5066	1537
Grp Volume(v), veh/h	563	1114	1173	149	668	676	195	525	256	253	1277	1047
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1770	1767	1689	1601	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	14.9	15.5	19.7	24.1	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	14.9	15.5	19.7	24.1	68.4
Prop In Lane	1.00		0.18	1.00		0.22	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	454	155	1419	672	276	2475	1140
V/C Ratio(X)	1.29	1.55	1.61	0.94	1.48	1.49	1.26	0.37	0.38	0.92	0.52	0.92
Avail Cap(c_a), veh/h	437	718	728	159	452	454	155	1419	672	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	27.9	28.0	58.2	24.5	15.3
Incr Delay (d2), s/veh	146.4	255.5	280.8	52.3	227.0	231.3	156.9	0.7	1.6	25.5	0.8	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.1	75.3	81.6	7.6	44.3	45.1	12.3	6.3	6.3	10.8	9.9	28.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	199.1	297.0	322.3	115.6	279.1	283.4	220.8	28.6	29.7	83.6	25.3	28.5
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	C
Approach Vol, veh/h		2850			1493			976			2577	
Approach Delay, s/veh		288.1			264.7			67.3			32.3	
Approach LOS		F			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	65.0	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	21.7	17.5	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.8	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	172.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1890	3050	2080	200	121	60
Future Volume (veh/h)	1890	3050	2080	200	121	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2032	3280	2237	0	130	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4162	2220		161	143
Arrive On Green	0.35	0.82	0.44	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2032	3280	2237	0	130	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	39.3	52.6	0.0	8.7	4.7
Cycle Q Clear(g_c), s	41.6	39.3	52.6	0.0	8.7	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4162	2220		161	143
V/C Ratio(X)	1.71	0.79	1.01		0.81	0.45
Avail Cap(c_a), veh/h	1188	4162	2220		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	5.4	33.7	0.0	53.5	51.7
Incr Delay (d2), s/veh	323.0	1.6	21.0	0.0	3.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	70.5	10.1	25.2	0.0	4.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	362.2	7.0	54.7	0.0	57.2	52.6
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5312	2237	A	195	
Approach Delay, s/veh		142.9	54.7		55.6	
Approach LOS		F	D		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.9		16.1	46.0	57.9
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		41.3		10.7	43.6	54.6
Green Ext Time (p_c), s		38.1		0.3	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			115.2
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	190	290	283	101	244	220	1210	210	220	1260	230
Future Volume (veh/h)	190	190	290	283	101	244	220	1210	210	220	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	198	302	295	105	254	229	1260	219	229	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	257	414	337	178	462	378	268	1092	188	249	1507	780
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3428	1856	1508	1767	1856	1517	3428	2993	515	1767	3526	1549
Grp Volume(v), veh/h	198	198	302	295	105	254	229	737	742	229	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1508	1767	1856	1517	1714	1763	1745	1767	1763	1549
Q Serve(g_s), s	6.5	10.7	22.4	11.6	5.2	17.4	7.6	42.0	42.0	14.7	39.1	10.5
Cycle Q Clear(g_c), s	6.5	10.7	22.4	11.6	5.2	17.4	7.6	42.0	42.0	14.7	39.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	257	414	337	178	462	378	268	643	637	249	1507	780
V/C Ratio(X)	0.77	0.48	0.90	1.66	0.23	0.67	0.85	1.15	1.16	0.92	0.87	0.31
Avail Cap(c_a), veh/h	340	500	406	178	497	406	268	643	637	249	1510	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	38.9	43.4	51.7	34.4	39.0	52.4	36.5	36.5	48.8	30.0	16.9
Incr Delay (d2), s/veh	5.3	0.9	19.6	318.9	0.1	3.0	21.6	83.0	90.5	35.8	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.0	9.9	20.8	2.3	6.6	4.0	32.0	33.0	8.8	16.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	39.7	63.0	370.6	34.5	41.9	74.0	119.6	127.0	84.6	36.0	17.2
LnGrp LOS	E	D	E	F	C	D	E	F	F	F	D	B
Approach Vol, veh/h		698			654			1708			1781	
Approach Delay, s/veh		54.9			189.0			116.7			39.7	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.2	13.4	54.5	13.0	34.2
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	16.7	44.0	13.6	24.4	9.6	41.1	8.5	19.4
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	6.6	0.1	0.6

Intersection Summary			
HCM 6th Ctrl Delay			89.2
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P1 PM
37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1274	320	290	570	0	0	0	0	190	0	1090
Future Volume (veh/h)	0	1274	320	290	570	0	0	0	0	190	0	1090
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1341	337	305	600	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1526	681	995	2725	0				231	0	
Arrive On Green	0.00	0.43	0.43	0.58	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1341	337	305	600	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	34.8	15.5	4.5	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.8	15.5	4.5	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1526	681	995	2725	0				231	0	
V/C Ratio(X)	0.00	0.88	0.50	0.31	0.22	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	995	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.13	0.13	0.42	0.42	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	26.0	20.5	15.8	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.3	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.7	5.4	1.6	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.1	20.8	15.9	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	C	B	A	A				D	A	
Approach Vol, veh/h		1678			905						200	A
Approach Delay, s/veh		25.8			5.4						50.5	
Approach LOS		C			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	34.0	48.3		17.7		82.3						
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0						
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0						
Max Q Clear Time (g_c+I1), s	16.5	36.8		13.1		2.0						
Green Ext Time (p_c), s	0.6	6.5		0.1		2.8						
Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050A + P1 PM
38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	903	561	0	0	540	380	320	10	640	0	0	0
Future Volume (veh/h)	903	561	0	0	540	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	912	567	0	0	545	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	977	2168	0	0	543	382	488	15	447			
Arrive On Green	0.48	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2031	1365	1717	53	1572			
Grp Volume(v), veh/h	912	567	0	0	496	433	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1540	1770	0	1572			
Q Serve(g_s), s	25.1	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.1	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.89	0.97		1.00			
Lane Grp Cap(c), veh/h	977	2168	0	0	494	431	503	0	447			
V/C Ratio(X)	0.93	0.26	0.00	0.00	1.00	1.00	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1005	2168	0	0	494	431	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.3	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	9.4	0.2	0.0	0.0	41.6	44.5	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.0	0.0	0.0	0.0	17.3	15.4	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.2	0.0	0.0	77.6	80.5	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1479			929			979				
Approach Delay, s/veh		21.5			78.9			176.0				
Approach LOS		C			E			F				
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		67.0		33.0	34.0	33.0						
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5						
Max Green Setting (Gmax), s		61.5		28.4	29.3	* 28						
Max Q Clear Time (g_c+I1), s		2.0		30.4	27.1	30.0						
Green Ext Time (p_c), s		2.6		0.0	0.9	0.0						
Intersection Summary												
HCM 6th Ctrl Delay			81.9									
HCM 6th LOS			F									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1050	10	361	821	0	1250
Future Volume (veh/h)	1050	10	361	821	0	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1115	0	380	0	0	1316
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1230	560	1562		0	1562
Arrive On Green	0.35	0.00	0.44	0.00	0.00	0.44
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1115	0	380	0	0	1316
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	20.4	0.0	4.6	0.0	0.0	22.6
Cycle Q Clear(g_c), s	20.4	0.0	4.6	0.0	0.0	22.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1230	560	1562		0	1562
V/C Ratio(X)	0.91	0.00	0.24		0.00	0.84
Avail Cap(c_a), veh/h	1273	580	1562		0	1562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	11.8	0.0	0.0	16.8
Incr Delay (d2), s/veh	9.5	0.0	0.4	0.0	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	1.7	0.0	0.0	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.6	0.0	12.2	0.0	0.0	22.5
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1115		380	A		1316
Approach Delay, s/veh	30.6		12.2			22.5
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.6	35.6	32.4
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.6	24.6	22.4
Green Ext Time (p_c), s	3.3	4.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX K

YEAR 2050 WITH ALTERNATIVE 1 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6841	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1254
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6809	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1248
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8318	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1525
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9611	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1762
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7871	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1743
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8405	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1861
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8964	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1985
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8942	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1980
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8346	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1848
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8882	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1966
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9482	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2099
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9488	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2101
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9246	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2047
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	49.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9842	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2179
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10502	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2325
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10508	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2326
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7666	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2122
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8162	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2259
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8702	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2408
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8718	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2413
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10505	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2326
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11182	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2476
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11932	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2642
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11937	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2643
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8584	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1901
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.9
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9132	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2022
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9751	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2159
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9755	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2160
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3842	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1050
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, In	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3010	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	823
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.2
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4880	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1334
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4702	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1285
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4081	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1116
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5599	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1530
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5758	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2099
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4391	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1600
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6801	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1487
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9339	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2042
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9608	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2101
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7331	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1603
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6391	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1747
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8773	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2398
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9032	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1975
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6881	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1505
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6831	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1865
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9383	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2562
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.15
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9662	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2111
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.1
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 1: Navy Recapitalization Only
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7361	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1608
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX L

YEAR 2050 WITH ALTERNATIVE 2 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	805
Future Volume (vph)	190	210	90	140	140	805
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	875

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	875
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	875
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.78
Capacity (veh/h)	610	667	741	577	1121
Control Delay (s)	10.4	9.6	9.9	10.5	16.4
Approach Delay (s)	10.0		9.9	15.5	
Approach LOS	A		A	C	

Intersection Summary			
Delay	13.3		
Level of Service	B		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	388	120	835	60	280	190
Future Volume (veh/h)	388	120	835	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	413	128	888	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	463	1231	1176		463	624
Arrive On Green	0.26	0.66	0.33	0.00	0.13	0.13
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	413	128	888	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	14.0	1.5	13.9	0.0	5.1	5.5
Cycle Q Clear(g_c), s	14.0	1.5	13.9	0.0	5.1	5.5
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	463	1231	1176		463	624
V/C Ratio(X)	0.89	0.10	0.75		0.64	0.32
Avail Cap(c_a), veh/h	565	1647	1763		1245	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	3.8	18.4	0.0	25.4	12.9
Incr Delay (d2), s/veh	12.9	0.0	0.4	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.4	5.2	0.0	2.0	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.9	3.8	18.8	0.0	26.0	13.0
LnGrp LOS	C	A	B		C	B
Approach Vol, veh/h		541	888	A	500	
Approach Delay, s/veh		27.5	18.8		20.7	
Approach LOS		C	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.1		14.9	20.4	26.7
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.5		7.5	16.0	15.9
Green Ext Time (p_c), s		0.5		0.9	0.3	3.9

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	297	0	0	10	434	398	5	10	825	220
Future Volume (veh/h)	140	5	297	0	0	10	434	398	5	10	825	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	313				457	419	5	11	868	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	924	0	597				435	1724	21	20	996	266
Arrive On Green	0.26	0.00	0.26				0.13	0.48	0.48	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1520				3428	3566	43	1767	2711	724
Grp Volume(v), veh/h	151	0	313				457	207	217	11	564	536
Grp Sat Flow(s),veh/h/ln	1767	0	1520				1714	1763	1846	1767	1763	1672
Q Serve(g_s), s	2.0	0.0	9.5				7.6	4.1	4.1	0.4	17.8	17.9
Cycle Q Clear(g_c), s	2.0	0.0	9.5				7.6	4.1	4.1	0.4	17.8	17.9
Prop In Lane	1.00		1.00				1.00		0.02	1.00		0.43
Lane Grp Cap(c), veh/h	924	0	597				435	852	892	20	648	614
V/C Ratio(X)	0.16	0.00	0.52				1.05	0.24	0.24	0.56	0.87	0.87
Avail Cap(c_a), veh/h	1772	0	962				435	852	892	151	672	637
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	14.1				26.1	9.0	9.1	29.4	17.6	17.6
Incr Delay (d2), s/veh	0.1	0.0	1.2				56.7	0.2	0.2	8.8	12.0	12.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2				6.3	1.4	1.4	0.2	8.5	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	15.3				82.8	9.2	9.2	38.3	29.6	30.3
LnGrp LOS	B	A	B				F	A	A	D	C	C
Approach Vol, veh/h		464						881			1111	
Approach Delay, s/veh		15.9						47.4			30.0	
Approach LOS		B						D			C	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.1	33.8		20.9	12.0	26.9
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.4	6.1		11.5	9.6	19.9
Green Ext Time (p_c), s	0.0	2.6		2.9	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	96	10	210	50	622	55	130	812	40
Future Volume (veh/h)	10	10	10	96	10	210	50	622	55	130	812	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	100	10	219	52	648	57	135	846	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	210	203	162	198	47	312	71	1529	133	173	1300	65
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.32	0.32	0.10	0.38	0.38
Sat Flow, veh/h	385	652	519	352	150	999	1767	4723	411	1767	3409	169
Grp Volume(v), veh/h	30	0	0	329	0	0	52	461	244	135	437	451
Grp Sat Flow(s),veh/h/ln	1556	0	0	1501	0	0	1767	1689	1757	1767	1763	1815
Q Serve(g_s), s	0.0	0.0	0.0	6.6	0.0	0.0	1.6	5.7	5.8	4.0	10.9	10.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	10.1	0.0	0.0	1.6	5.7	5.8	4.0	10.9	10.9
Prop In Lane	0.33		0.33	0.30		0.67	1.00		0.23	1.00		0.09
Lane Grp Cap(c), veh/h	575	0	0	556	0	0	71	1093	569	173	672	692
V/C Ratio(X)	0.05	0.00	0.00	0.59	0.00	0.00	0.73	0.42	0.43	0.78	0.65	0.65
Avail Cap(c_a), veh/h	939	0	0	928	0	0	186	1589	827	351	995	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	0.0	0.0	16.0	0.0	0.0	25.3	14.1	14.2	23.5	13.6	13.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	5.3	0.4	0.7	2.9	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	3.1	0.0	0.0	0.7	2.0	2.1	1.7	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	0.0	16.4	0.0	0.0	30.6	14.5	14.9	26.4	15.0	15.0
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			329			757			1023	
Approach Delay, s/veh		12.9			16.4			15.7			16.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	22.2		21.5	6.5	25.2		21.5
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	6.0	7.8		2.6	3.6	12.9		12.1
Green Ext Time (p_c), s	0.1	5.7		0.1	0.0	6.9		1.4

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	587	230	180	748	0	180	0	150	0	0	0
Future Volume (veh/h)	0	587	230	180	748	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	605	237	186	771	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1010	383	218	1616	0	412	0	310	0	375	0
Arrive On Green	0.00	0.36	0.36	0.12	0.58	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2923	1059	1767	2849	0	1256	0	1531	0	1856	0
Grp Volume(v), veh/h	0	575	267	186	771	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1192	1767	1388	0	1256	0	1531	0	1856	0
Q Serve(g_s), s	0.0	8.0	8.4	4.7	7.3	0.0	6.3	0.0	4.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.0	8.4	4.7	7.3	0.0	6.3	0.0	4.1	0.0	0.0	0.0
Prop In Lane	0.00		0.89	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	962	431	218	1616	0	412	0	310	0	375	0
V/C Ratio(X)	0.00	0.60	0.62	0.85	0.48	0.00	0.45	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1469	659	218	2145	0	991	0	1014	0	1266	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.8	11.9	19.5	5.5	0.0	17.0	0.0	16.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.4	25.4	0.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	1.9	3.2	1.3	0.0	1.6	0.0	1.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.4	13.3	45.0	5.6	0.0	17.3	0.0	16.6	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		842			957			341			0	
Approach Delay, s/veh		12.7			13.2			16.9			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	21.3	14.1	31.3	14.1
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	6.7	10.4	0.0	9.3	8.3
Green Ext Time (p_c), s	0.0	4.9	0.0	3.9	1.0

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	310	230	478	270	180	280	639	457	80	489	200
Future Volume (veh/h)	209	310	230	478	270	180	280	639	457	80	489	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.92	1.00		0.96	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	225	333	247	514	290	194	301	687	491	86	526	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
Arrive On Green	0.08	0.30	0.30	0.11	0.33	0.33	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1767	2776	1270	2699	1461	1144	1767	3526	1183	1391	3526	1412
Grp Volume(v), veh/h	225	333	247	514	290	194	301	687	491	86	526	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1270	1350	1461	1144	1767	1763	1183	1391	1763	1412
Q Serve(g_s), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	19.7	37.9	7.3	14.3	14.7
Cycle Q Clear(g_c), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	19.7	37.9	7.3	14.3	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
V/C Ratio(X)	1.62	0.40	0.50	1.67	0.59	0.51	2.28	0.61	0.95	0.84	0.47	0.48
Avail Cap(c_a), veh/h	139	839	501	308	493	386	132	1119	517	105	1122	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	33.3	29.1	52.9	33.0	31.8	55.2	34.5	32.9	54.6	32.8	32.9
Incr Delay (d2), s/veh	308.2	0.4	0.9	316.1	1.4	0.6	601.4	1.0	27.6	40.3	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	3.9	5.6	18.1	7.1	4.5	26.0	8.6	17.3	3.7	6.1	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	363.1	33.7	30.0	368.9	34.4	32.4	656.7	35.5	60.5	95.0	32.9	33.2
LnGrp LOS	F	C	C	F	C	C	F	D	E	F	C	C
Approach Vol, veh/h		805			998			1479			827	
Approach Delay, s/veh		124.6			206.3			170.2			39.4	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.6	14.3	44.5	14.8	45.8	14.2	44.6
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	20.0	10.9	16.7	11.4	21.7	9.3	39.9
Green Ext Time (p_c), s	0.0	3.6	0.0	2.8	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	143.7
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	699	610	140
Future Vol, veh/h	50	30	70	699	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	713	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1297	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	165	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	123	345	706	-	-	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.9	1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	162	-	-
HCM Lane V/C Ratio	0.101	-	0.504	-	-
HCM Control Delay (s)	10.7	-	47.9	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	380	360	2168	0	0	2675	630
Future Volume (veh/h)	0	0	0	90	650	380	360	2168	0	0	2675	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	392	371	2235	0	0	2758	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				89	655	412	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				264	1935	1219	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				648	0	507	371	2235	0	0	2758	649
Grp Sat Flow(s),veh/h/ln				1842	0	1576	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	533	341	3632	0	0	2463	736
V/C Ratio(X)				1.04	0.00	0.95	1.09	0.62	0.00	0.00	1.12	0.88
Avail Cap(c_a), veh/h				624	0	533	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.9	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				46.6	0.0	26.7	44.5	0.1	0.0	0.0	60.1	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				27.9	0.0	19.7	13.1	0.0	0.0	0.0	38.4	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				89.6	0.0	68.7	84.4	0.1	0.0	0.0	93.5	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1155			2606			3407	
Approach Delay, s/veh					80.4			12.1			84.2	
Approach LOS					F			B			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2
Green Ext Time (p_c), s		9.9		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↑	↱					↑↑↑↱		↰	↑↑↑↑	
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1908	30	300	2585	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1908	30	300	2585	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	2008	32	316	2721	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2370	38	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5301	82	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1320	720	316	2721	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1839	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	17.9	18.0	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	17.9	18.0	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	849	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.85	0.85	1.08	0.64	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	849	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.22	0.22	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.4	3.4	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	1.4	2.5	40.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	1.9	2.4	11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	4.8	5.9	84.2	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						2040			3037	
Approach Delay, s/veh		52.4						5.2			8.8	
Approach LOS		D						A			A	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.0	64.9		39.1		90.9						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	21.6	49.1		45.1		75.1						
Max Q Clear Time (g_c+I1), s	23.6	20.0		30.9		2.0						
Green Ext Time (p_c), s	0.0	6.5		1.1		16.0						
Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰		↱		↑↑↱		↰	↑↑	
Traffic Volume (veh/h)	300	300	20	408	0	370	0	539	337	90	320	0
Future Volume (veh/h)	300	300	20	408	0	370	0	539	337	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.85	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	323	22	439	0	398	0	580	362	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	486	471	32	0	0	0	0	795	496	323	1926	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.41	0.41	0.06	0.55	0.00
Sat Flow, veh/h	1767	1712	117		0		0	2032	1210	1767	3618	0
Grp Volume(v), veh/h	323	0	345		0.0		0	527	415	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1829				0	1763	1386	1767	1763	0
Q Serve(g_s), s	8.9	0.0	9.3				0.0	13.8	13.8	1.6	2.7	0.0
Cycle Q Clear(g_c), s	8.9	0.0	9.3				0.0	13.8	13.8	1.6	2.7	0.0
Prop In Lane	1.00		0.06				0.00		0.87	1.00		0.00
Lane Grp Cap(c), veh/h	486	0	503				0	723	568	323	1926	0
V/C Ratio(X)	0.66	0.00	0.69				0.00	0.73	0.73	0.30	0.18	0.00
Avail Cap(c_a), veh/h	743	0	769				0	774	608	403	2189	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	17.8				0.0	13.6	13.6	9.9	6.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	1.7				0.0	6.4	8.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	3.7				0.0	5.9	4.9	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	19.4				0.0	20.0	21.7	10.1	6.5	0.0
LnGrp LOS	B	A	B				A	C	C	B	A	A
Approach Vol, veh/h		668						942			441	
Approach Delay, s/veh		19.3						20.7			7.3	
Approach LOS		B						C			A	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	7.5	27.4		20.0		34.9						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	5.6	24.1		23.1		34.1						
Max Q Clear Time (g_c+I1), s	3.6	15.8		11.3		4.7						
Green Ext Time (p_c), s	0.0	6.7		2.5		6.4						
Intersection Summary												
HCM 6th Ctrl Delay			17.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	347	172	324	384	20	189	1738	429	0	2175	490
Future Volume (veh/h)	220	347	172	324	384	20	189	1738	429	0	2175	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	199	411	181	255	524	21	199	1829	452	0	2289	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	406	852	326	245	490	20	140	2011	483	0	2094	
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.08	0.99	0.99	0.00	0.41	0.00
Sat Flow, veh/h	1767	3711	1422	1767	3538	142	3428	4057	974	0	5233	1572
Grp Volume(v), veh/h	199	411	181	255	274	271	199	1513	768	0	2289	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1422	1767	1856	1824	1714	1689	1654	0	1689	1572
Q Serve(g_s), s	12.7	12.5	14.6	18.0	18.0	18.0	5.3	4.8	7.1	0.0	53.7	0.0
Cycle Q Clear(g_c), s	12.7	12.5	14.6	18.0	18.0	18.0	5.3	4.8	7.1	0.0	53.7	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.59	0.00		1.00
Lane Grp Cap(c), veh/h	406	852	326	245	257	253	140	1674	820	0	2094	
V/C Ratio(X)	0.49	0.48	0.55	1.04	1.07	1.07	1.42	0.90	0.94	0.00	1.09	
Avail Cap(c_a), veh/h	489	1028	394	245	257	253	140	1674	820	0	2094	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.58	0.58	0.58	0.30	0.30	0.30	0.00	0.72	0.00
Uniform Delay (d), s/veh	43.5	43.4	44.2	56.0	56.0	56.0	59.7	0.3	0.3	0.0	38.1	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.5	55.2	62.1	63.6	202.9	2.8	7.6	0.0	48.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.8	5.2	11.8	12.8	12.7	6.1	0.9	1.9	0.0	30.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	43.5	44.8	111.2	118.1	119.6	262.6	3.1	7.9	0.0	86.3	0.0
LnGrp LOS	D	D	D	F	F	F	F	A	A	A	F	
Approach Vol, veh/h		791			800			2480			2289	A
Approach Delay, s/veh		43.9			116.4			25.4			86.3	
Approach LOS		D			F			C			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		70.3		35.8	10.7	59.6		23.9
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		9.1		16.6	7.3	55.7		20.0
Green Ext Time (p_c), s		9.0		1.2	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		61.1
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	316	160	175	435	408	200	1639	140	427	1769	195
Future Volume (veh/h)	316	316	160	175	435	408	200	1639	140	427	1769	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	329	329	167	182	453	425	208	1707	146	445	1843	203
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	895	386	171	854	364	258	1814	155	390	1963	215
Arrive On Green	0.10	0.25	0.25	0.10	0.24	0.24	0.08	0.38	0.38	0.23	0.85	0.85
Sat Flow, veh/h	3428	3526	1522	1767	3526	1502	3428	4743	405	3428	4621	506
Grp Volume(v), veh/h	329	329	167	182	453	425	208	1214	639	445	1343	703
Grp Sat Flow(s),veh/h/ln	1714	1763	1522	1767	1763	1502	1714	1689	1770	1714	1689	1750
Q Serve(g_s), s	12.4	10.0	12.0	12.6	14.5	31.5	7.8	45.1	45.3	14.8	38.1	39.9
Cycle Q Clear(g_c), s	12.4	10.0	12.0	12.6	14.5	31.5	7.8	45.1	45.3	14.8	38.1	39.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.29
Lane Grp Cap(c), veh/h	359	895	386	171	854	364	258	1292	677	390	1435	743
V/C Ratio(X)	0.92	0.37	0.43	1.06	0.53	1.17	0.81	0.94	0.94	1.14	0.94	0.95
Avail Cap(c_a), veh/h	359	895	386	171	854	364	282	1343	704	390	1435	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52	0.09	0.09	0.09
Uniform Delay (d), s/veh	57.6	39.9	40.6	58.7	42.8	49.3	59.2	38.7	38.8	50.2	8.5	8.6
Incr Delay (d2), s/veh	27.2	0.1	0.3	86.4	0.3	101.3	7.2	8.6	14.6	66.8	1.6	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	4.4	4.5	9.7	6.4	22.0	3.6	19.7	21.9	9.1	3.8	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.9	40.0	40.9	145.1	43.1	150.5	66.4	47.3	53.4	117.0	10.1	11.9
LnGrp LOS	F	D	D	F	D	F	E	D	D	F	B	B
Approach Vol, veh/h		825			1060			2061			2491	
Approach Delay, s/veh		58.1			103.7			51.1			29.7	
Approach LOS		E			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	54.6	17.0	37.9	14.2	60.9	18.5	36.4
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	16.8	47.3	14.6	14.0	9.8	41.9	14.4	33.5
Green Ext Time (p_c), s	0.0	2.4	0.0	0.9	0.0	5.3	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			52.4
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	437	356	10	724	385	120	10	1192	587	120	1669	305
Future Volume (veh/h)	437	356	10	724	385	120	10	1192	587	120	1669	305
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	446	363	10	739	393	122	10	1216	599	122	1703	311
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	415	11	612	430	352	21	1985	601	169	1514	648
Arrive On Green	0.17	0.23	0.23	0.18	0.23	0.23	0.01	0.39	0.39	0.10	0.86	0.86
Sat Flow, veh/h	1767	1795	49	3428	1856	1519	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	446	0	373	739	393	122	10	1216	599	122	1703	311
Grp Sat Flow(s),veh/h/ln	1767	0	1845	1714	1856	1519	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	22.6	0.0	25.3	23.2	26.8	7.3	0.7	25.0	50.7	4.5	55.8	3.5
Cycle Q Clear(g_c), s	22.6	0.0	25.3	23.2	26.8	7.3	0.7	25.0	50.7	4.5	55.8	3.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	426	612	430	352	21	1985	601	169	1514	648
V/C Ratio(X)	1.45	0.00	0.87	1.21	0.91	0.35	0.49	0.61	1.00	0.72	1.12	0.48
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	1985	601	232	1514	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	0.38	0.38	0.38
Uniform Delay (d), s/veh	53.7	0.0	48.2	53.4	48.7	29.6	63.9	31.6	39.5	57.7	9.2	1.7
Incr Delay (d2), s/veh	220.6	0.0	14.3	106.3	17.0	0.2	6.4	1.4	36.1	1.3	59.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.8	0.0	13.3	19.0	14.4	2.7	0.4	10.3	24.8	1.9	16.2	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	274.3	0.0	62.5	159.7	65.6	29.8	70.3	33.1	75.5	59.0	69.0	2.7
LnGrp LOS	F	A	E	F	E	C	E	C	E	E	F	A
Approach Vol, veh/h		819			1254			1825			2136	
Approach Delay, s/veh		177.9			117.6			47.2			58.8	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	56.6	27.6	34.9	5.9	61.5	27.5	35.0
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	52.7	25.2	27.3	2.7	57.8	24.6	28.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		83.7
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	853	210	650	1069	90	180
Future Volume (veh/h)	853	210	650	1069	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	898	221	684	1125	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	863	212	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2867	682	1767	3618	538	1071
Grp Volume(v), veh/h	570	549	684	1125	285	0
Grp Sat Flow(s),veh/h/ln	1763	1693	1767	1763	1615	0
Q Serve(g_s), s	28.0	28.0	28.5	13.8	15.2	0.0
Cycle Q Clear(g_c), s	28.0	28.0	28.5	13.8	15.2	0.0
Prop In Lane		0.40	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	527	560	2370	344	0
V/C Ratio(X)	1.04	1.04	1.22	0.47	0.83	0.00
Avail Cap(c_a), veh/h	549	527	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	31.0	30.7	7.1	33.8	0.0
Incr Delay (d2), s/veh	41.4	42.7	115.4	0.7	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	17.2	29.5	4.6	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.4	73.7	146.1	7.8	41.4	0.0
LnGrp LOS	F	F	F	A	D	A
Approach Vol, veh/h	1119			1809	285	
Approach Delay, s/veh	73.0			60.1	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	32.5	33.4	65.9	24.1
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	28.5	* 23	54.7	25.0
Max Q Clear Time (g_c+I1), s	30.5	30.0	15.8	17.2
Green Ext Time (p_c), s	0.0	0.0	10.7	0.3

Intersection Summary		
HCM 6th Ctrl Delay		62.9
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	9.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	345	1066	30	0	1242
Future Vol, veh/h	0	345	1066	30	0	1242
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	397	1225	34	0	1428

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	650	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	409	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	401	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	74.7	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	401	-
HCM Lane V/C Ratio	-	-	0.989	-
HCM Control Delay (s)	-	-	74.7	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	11.9	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1043	1595	1096	1088	154
Future Volume (veh/h)	0	1043	1595	1096	1088	154
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1064	1628	1118	1110	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1570	1570	1253	1264	
Arrive On Green	0.00	0.45	0.45	0.45	0.37	0.00
Sat Flow, veh/h	0	3711	3618	1511	3428	1572
Grp Volume(v), veh/h	0	1064	1628	1118	1110	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1511	1714	1572
Q Serve(g_s), s	0.0	13.7	25.4	25.4	17.2	0.0
Cycle Q Clear(g_c), s	0.0	13.7	25.4	25.4	17.2	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1570	1570	1253	1264	
V/C Ratio(X)	0.00	0.68	1.04	0.89	0.88	
Avail Cap(c_a), veh/h	0	1570	1570	1253	1443	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.6	15.8	3.3	16.8	0.0
Incr Delay (d2), s/veh	0.0	1.2	32.8	8.4	5.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	15.5	17.4	6.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.7	48.6	11.8	22.5	0.0
LnGrp LOS	A	B	F	B	C	
Approach Vol, veh/h		1064	2746		1110	A
Approach Delay, s/veh		13.7	33.6		22.5	
Approach LOS		B	C		C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	30.8	26.2	30.8
Change Period (Y+Rc), s	5.4	5.2	5.4
Max Green Setting (Gmax), s	25.4	24.0	25.4
Max Q Clear Time (g_c+I1), s	15.7	19.2	27.4
Green Ext Time (p_c), s	5.0	1.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	40	5	40	140	1136	50	130	937	170
Future Volume (veh/h)	30	0	50	40	5	40	140	1136	50	130	937	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	47	6	47	165	1336	59	153	1102	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	166	31	150	390	28	218	209	2025	89	195	1712	310
Arrive On Green	0.16	0.00	0.16	0.16	0.16	0.16	0.12	0.41	0.41	0.11	0.40	0.40
Sat Flow, veh/h	360	195	935	1314	174	1363	1767	4963	219	1767	4278	776
Grp Volume(v), veh/h	94	0	0	47	0	53	165	909	486	153	870	432
Grp Sat Flow(s),veh/h/ln	1490	0	0	1314	0	1537	1767	1689	1805	1767	1689	1676
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.4	4.1	10.0	10.0	3.9	9.5	9.5
Cycle Q Clear(g_c), s	2.4	0.0	0.0	1.1	0.0	1.4	4.1	10.0	10.0	3.9	9.5	9.5
Prop In Lane	0.37		0.63	1.00		0.89	1.00		0.12	1.00		0.46
Lane Grp Cap(c), veh/h	346	0	0	390	0	246	209	1378	736	195	1351	671
V/C Ratio(X)	0.27	0.00	0.00	0.12	0.00	0.22	0.79	0.66	0.66	0.78	0.64	0.64
Avail Cap(c_a), veh/h	1119	0	0	1100	0	1076	259	1537	822	294	1596	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	0.0	16.6	0.0	16.7	19.6	11.0	11.0	19.8	11.1	11.1
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.2	9.7	1.1	2.0	3.8	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.4	0.0	0.4	2.1	3.1	3.5	1.6	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	0.0	16.6	0.0	16.9	29.3	12.0	12.9	23.6	11.8	12.6
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		94			100			1560			1455	
Approach Delay, s/veh		17.3			16.7			14.1			13.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	24.0		12.2	9.8	23.7		12.2
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.9	12.0		4.4	6.1	11.5		3.4
Green Ext Time (p_c), s	0.0	6.5		0.3	0.0	6.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	177.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	467	778	1306	947	20
Future Vol, veh/h	0	467	778	1306	947	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	519	864	1451	1052	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	557	1084	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 404	~ 354	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 396	~ 351	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	185.1	257.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 351	-	396	-	-
HCM Lane V/C Ratio	2.463	-	1.31	-	-
HCM Control Delay (s)	$ 690.4	-	185.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	68.9	-	23.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	174	0	2101	1768	216
Future Vol, veh/h	0	174	0	2101	1768	216
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	200	0	2415	2032	248

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1160	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 187	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 183	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	146.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	183	-	-
HCM Lane V/C Ratio	-	1.093	-	-
HCM Control Delay (s)	-	146.1	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	9.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	20	30	20	30	10	420	2031	260	145	1560	239
Future Volume (veh/h)	36	20	30	20	30	10	420	2031	260	145	1560	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.69	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	40	22	33	22	33	11	467	2257	289	161	1733	266
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	51	642	544	31	621	364	276	1272	527	141	895	133
Arrive On Green	0.03	0.35	0.35	0.02	0.33	0.33	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1089	1767	3526	1461	1767	3056	453
Grp Volume(v), veh/h	40	22	33	22	33	11	467	2257	289	161	974	1025
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1089	1767	1763	1461	1767	1763	1746
Q Serve(g_s), s	2.7	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.8	9.5	34.9	34.9
Cycle Q Clear(g_c), s	2.7	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.8	9.5	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	51	642	544	31	621	364	276	1272	527	141	516	511
V/C Ratio(X)	0.79	0.03	0.06	0.72	0.05	0.03	1.69	1.77	0.55	1.14	1.89	2.00
Avail Cap(c_a), veh/h	76	642	544	86	623	366	276	1272	527	141	516	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	25.8	26.0	58.3	26.9	26.7	50.3	38.1	30.4	54.9	42.2	42.2
Incr Delay (d2), s/veh	14.9	0.0	0.0	11.0	0.0	0.0	327.3	351.8	1.4	119.5	406.4	459.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.4	0.6	0.8	0.6	0.2	33.3	80.3	6.8	8.9	73.3	80.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	25.8	26.1	69.3	26.9	26.7	377.6	389.9	31.8	174.3	448.6	501.3
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	F	F
Approach Vol, veh/h		95			66			3013			2160	
Approach Delay, s/veh		45.5			41.0			353.7			453.2	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.7	6.5	46.1	23.0	43.6	7.8	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	11.5	45.0	3.5	3.7	20.6	36.9	4.7	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary		
HCM 6th Ctrl Delay		384.6
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1517.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2068	2448	2711	1480	130
Future Vol, veh/h	0	2068	2448	2711	1480	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2248	2661	2947	1609	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	825	1760	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 314	~ 347	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 308	~ 344	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 2864.3	$ 1451.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 344	-	308	-	-
HCM Lane V/C Ratio	7.735	-	7.298	-	-
HCM Control Delay (s)	$ 3058.2		$ 2864.3	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	293	-	245.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	166	430	300	10	415	110	270	5	50	10
Future Volume (veh/h)	5	80	166	430	300	10	415	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	216	558	390	13	539	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	206	427	379	716	24	420	87	214	85	635	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	512	1064	1038	1781	59	756	201	492	48	1460	276
Grp Volume(v), veh/h	6	0	320	558	0	403	1033	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1577	1038	0	1841	1449	0	0	1784	0	0
Q Serve(g_s), s	0.3	0.0	9.1	15.0	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	9.1	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.03	0.52		0.34	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	633	379	0	739	722	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.51	1.47	0.00	0.55	1.43	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	633	379	0	739	722	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.5	24.9	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	226.7	0.0	0.9	202.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	29.1	0.0	3.8	49.9	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.5	251.6	0.0	14.6	220.5	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		326			961			1033			84	
Approach Delay, s/veh		14.6			152.2			220.5			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	29.0	31.0	29.0	31.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	24.1	26.1	24.1	26.1
Max Q Clear Time (g_c+I1), s	12.3	3.7	26.1	28.1
Green Ext Time (p_c), s	2.4	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	157.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	689	505	50	0	326	390
Future Volume (veh/h)	0	0	20	40	390	370	689	505	50	0	326	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	851	623	62	0	402	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	112	0	0	0	334	400
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	0	0	0	756	905
Grp Volume(v), veh/h	0	0	25	987	0	0	1536	0	0	0	0	883
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	0	0	0	0	0	1661
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.55		0.04	0.00		0.54
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	112	0	0	0	0	734
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	13.73	0.00	0.00	0.00	0.00	1.20
Avail Cap(c_a), veh/h	0	0	569	676	0	0	112	0	0	0	0	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	25.0	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	5744.8	0.0	0.0	0.0	0.0	104.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	179.8	0.0	0.0	0.0	0.0	27.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	5769.8	0.0	0.0	0.0	0.0	118.1
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			1536			883	
Approach Delay, s/veh		10.4			232.0			5769.8			118.1	
Approach LOS		B			F			F			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0		23.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		22.1		18.1		22.1		18.1				
Max Q Clear Time (g_c+I1), s		24.1		2.5		24.1		20.1				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	2680.2
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	380.7
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	1172	0	704	106	0
Future Vol, veh/h	450	1172	0	704	106	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1395	0	838	126	0
Number of Lanes	1	1	0	1	1	0

Approach	EB			NB	SB	
Opposing Approach				SB	NB	
Opposing Lanes	0			1	1	
Conflicting Approach Left	SB			EB		
Conflicting Lanes Left	1			2	0	
Conflicting Approach Right	NB				EB	
Conflicting Lanes Right	1			0	2	
HCM Control Delay	475.2			218.2	12.9	
HCM LOS	F			F	B	

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	704	450	1172	106
LT Vol	0	450	0	0
Through Vol	704	0	0	106
RT Vol	0	0	1172	0
Lane Flow Rate	838	536	1395	126
Geometry Grp	2	7	7	2
Degree of Util (X)	1.424	1.075	2.335	0.247
Departure Headway (Hd)	6.011	8.104	6.873	7.473
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	450	544	483
Service Time	4.011	5.804	4.573	5.473
HCM Lane V/C Ratio	1.369	1.191	2.564	0.261
HCM Control Delay	218.2	92.5	622.1	12.9
HCM Lane LOS	F	F	F	B
HCM 95th-tile Q	39.8	15.6	92.4	1

Intersection	
Intersection Delay, s/veh	304.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	1008	36	50	5	654	5	145	5	5	5
Future Vol, veh/h	5	300	1008	36	50	5	654	5	145	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	1145	41	57	6	743	6	165	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	341.2	14.8	282.3	12.7
HCM LOS	F	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	81%	2%	0%	40%	33%
Vol Thru, %	1%	98%	0%	55%	33%
Vol Right, %	18%	0%	100%	5%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	804	305	1008	91	15
LT Vol	654	5	0	36	5
Through Vol	5	300	0	50	5
RT Vol	145	0	1008	5	5
Lane Flow Rate	914	347	1145	103	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.566	0.648	1.916	0.209	0.035
Departure Headway (Hd)	6.856	8.039	7.308	9.343	9.405
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	539	454	515	387	383
Service Time	4.856	5.739	5.008	7.343	7.405
HCM Lane V/C Ratio	1.696	0.764	2.223	0.266	0.044
HCM Control Delay	282.3	24.4	437	14.8	12.7
HCM Lane LOS	F	C	F	B	B
HCM 95th-tile Q	44.1	4.5	62.1	0.8	0.1

Intersection	
Intersection Delay, s/veh	204.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	709	230	819
Future Vol, veh/h	95	100	80	709	230	819
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	739	240	853
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13.6	160.6	273.7
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	10%	100%	0%	0%
Vol Thru, %	90%	0%	0%	22%
Vol Right, %	0%	0%	100%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	789	95	100	1049
LT Vol	80	95	0	0
Through Vol	709	0	0	230
RT Vol	0	0	100	819
Lane Flow Rate	822	99	104	1093
Geometry Grp	2	7	7	2
Degree of Util (X)	1.283	0.224	0.201	1.557
Departure Headway (Hd)	6.278	9.282	8.03	5.503
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	584	389	450	667
Service Time	4.278	6.982	5.73	3.503
HCM Lane V/C Ratio	1.408	0.254	0.231	1.639
HCM Control Delay	160.6	14.6	12.7	273.7
HCM Lane LOS	F	B	B	F
HCM 95th-tile Q	29.6	0.8	0.7	52.8

Intersection	
Intersection Delay, s/veh	68.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	14	709	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	14	709	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	16	797	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	99.1	11.5	21
HCM LOS	-	F	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	9%
Vol Thru, %	100%	0%	100%	2%	91%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	733	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	14	300
RT Vol	0	40	0	709	0
Lane Flow Rate	90	45	0	824	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.179	0.081	0	1.14	0.645
Departure Headway (Hd)	7.697	6.975	7.156	4.984	6.664
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	469	517	0	733	545
Service Time	5.397	4.675	5.156	2.984	4.664
HCM Lane V/C Ratio	0.192	0.087	0	1.124	0.681
HCM Control Delay	12.1	10.3	10.2	99.1	21
HCM Lane LOS	B	B	N	F	C
HCM 95th-tile Q	0.6	0.3	0	25	4.6

Intersection	
Intersection Delay, s/veh	48.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	185	180	150	0	0	0	90	60	160	320	170	16
Future Vol, veh/h	185	180	150	0	0	0	90	60	160	320	170	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	193	188	156	0	0	0	94	63	167	333	177	17
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	55.3	19.6	58.4
HCM LOS	F	C	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	36%	63%
Vol Thru, %	19%	35%	34%
Vol Right, %	52%	29%	3%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	515	506
LT Vol	90	185	320
Through Vol	60	180	170
RT Vol	160	150	16
Lane Flow Rate	323	536	527
Geometry Grp	1	1	1
Degree of Util (X)	0.604	0.964	0.974
Departure Headway (Hd)	6.731	6.472	6.651
Convergence, Y/N	Yes	Yes	Yes
Cap	533	558	543
Service Time	4.806	4.527	4.715
HCM Lane V/C Ratio	0.606	0.961	0.971
HCM Control Delay	19.6	55.3	58.4
HCM Lane LOS	C	F	F
HCM 95th-tile Q	4	12.9	13.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	934	0	0	959	680
Future Volume (veh/h)	0	0	0	200	370	80	300	934	0	0	959	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	983	0	0	1009	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	983	0	0	1009	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.8	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.8	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.41	0.00	0.00	0.65	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.70	0.70	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	18.3	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.5	0.4	0.0	0.0	2.1	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	7.6	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.4	0.0	0.0	20.4	74.2
LnGrp LOS				C	C	C	C	A	A	A	C	F
Approach Vol, veh/h					684			1299			1725	
Approach Delay, s/veh					31.5			6.2			42.7	
Approach LOS					C			A			D	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9
Green Ext Time (p_c), s		11.1			0.0	0.0		2.4

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	634	160	460	699	0
Future Volume (veh/h)	600	380	240	0	0	0	0	634	160	460	699	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	654	165	474	721	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	654	165	474	721	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	15.1	7.8	11.3	11.0	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	15.1	7.8	11.3	11.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.57	0.33	0.85	0.41	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.93	0.93	0.81	0.81	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	19.4	17.2	34.2	8.2	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	1.9	1.7	6.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	5.0	2.3	5.1	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	21.3	18.9	40.2	8.7	0.0
LnGrp LOS	C	C	C				A	C	B	D	A	A
Approach Vol, veh/h		1258						819			1195	
Approach Delay, s/veh		31.3						20.8			21.2	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1
Max Q Clear Time (g_c+I1), s	13.3	17.1		18.6		13.0
Green Ext Time (p_c), s	0.4	3.8		2.5		6.5

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Year 2050A + P2 AM | Old Town Complex

31: Washington St & Pacific Hwy (N) | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	594	0	0	720	219
Future Volume (veh/h)	30	0	70	60	50	170	140	594	0	0	720	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	619	0	0	750	228
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	287	176	1502	0	0	1036	448
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.37	0.37
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	619	0	0	750	228
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	9.0	0.0	0.0	15.7	10.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	9.0	0.0	0.0	15.7	10.0
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	287	176	1502	0	0	1036	448
V/C Ratio(X)	1.11	0.00	0.00	0.18	0.14	0.62	0.83	0.41	0.00	0.00	0.72	0.51
Avail Cap(c_a), veh/h	94	0	0	671	705	564	176	1880	0	0	1398	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	23.1	22.9	25.3	30.3	9.6	0.0	0.0	18.7	16.9
Incr Delay (d2), s/veh	126.0	0.0	0.0	0.1	0.1	0.8	27.8	0.1	0.0	0.0	1.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	0.8	0.7	2.6	3.6	2.4	0.0	0.0	4.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.3	0.0	0.0	23.2	23.0	26.1	58.1	9.7	0.0	0.0	20.1	18.0
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			765			978	
Approach Delay, s/veh		158.3			24.9			18.9			19.6	
Approach LOS		F			C			B			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		40.8		8.0	11.3	29.5		19.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0
Max Q Clear Time (g_c+I1), s		11.0		6.0	7.6	17.7		9.5
Green Ext Time (p_c), s		3.1		0.0	0.0	6.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P2 AM | Old Town Complex

32: Washington St & Pacific Hwy (S) | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	354	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	441	0	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	958	0	743				0	651	86	288	551	0
Arrive On Green	0.27	0.00	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	441	0	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	0	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	4.2	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	4.2	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	958	0	743				0	369	367	288	551	0
V/C Ratio(X)	0.46	0.00	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	2543	0	1426				0	606	602	312	597	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0				0.0	0.7	0.7	6.2	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	0.0	5.9				0.0	15.4	15.5	22.2	16.5	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		530						478			489	
Approach Delay, s/veh		11.4						15.4			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.3		7.2
Max Q Clear Time (g_c+I1), s				7.1		6.2		6.3
Green Ext Time (p_c), s				1.1		1.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Year 2050A + P2 AM　　Old Town Complex

33: Pacific Hwy & Sassafras St　　08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	156	250	453	100	105	499	140
Future Volume (veh/h)	90	200	100	410	700	156	250	453	100	105	499	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	179	287	521	115	121	574	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	538	536	186	510	113	128	937	200	130	953	260
Arrive On Green	0.06	0.35	0.35	0.13	0.42	0.42	0.07	0.23	0.23	0.09	0.24	0.24
Sat Flow, veh/h	1767	1537	1531	1464	1211	269	1767	4128	883	1464	3916	1067
Grp Volume(v), veh/h	103	230	115	471	0	984	287	423	213	121	493	242
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1481	1767	1689	1633	1464	1689	1606
Q Serve(g_s), s	5.1	10.5	4.8	11.6	0.0	38.5	6.6	10.1	10.6	7.5	11.8	12.3
Cycle Q Clear(g_c), s	5.1	10.5	4.8	11.6	0.0	38.5	6.6	10.1	10.6	7.5	11.8	12.3
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.54	1.00		0.66
Lane Grp Cap(c), veh/h	99	538	536	186	0	623	128	766	371	130	822	391
V/C Ratio(X)	1.05	0.43	0.21	2.54	0.00	1.58	2.25	0.55	0.57	0.93	0.60	0.62
Avail Cap(c_a), veh/h	99	538	536	186	0	623	128	1082	523	130	1137	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	22.7	20.9	39.9	0.0	26.5	42.4	31.2	31.4	41.4	30.7	30.8
Incr Delay (d2), s/veh	103.4	0.2	0.1	707.0	0.0	268.0	587.0	1.2	2.6	58.0	1.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.7	1.7	40.6	0.0	59.1	23.6	4.2	4.4	4.8	4.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.6	22.9	21.0	747.0	0.0	294.4	629.4	32.4	34.0	99.4	31.9	33.7
LnGrp LOS	F	C	C	F	A	F	F	C	C	F	C	C
Approach Vol, veh/h		448			1455			923			856	
Approach Delay, s/veh		50.9			440.9			218.4			42.0	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	26.1	16.0	36.9	11.0	27.6	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	9.5	12.6	13.6	12.5	8.6	14.3	7.1	40.5
Green Ext Time (p_c), s	0.0	6.1	0.0	1.0	0.0	6.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	244.9
HCM 6th LOS	F

Year 2050A + P2 AM　　Old Town Complex

34: Pacific Hwy & Laurel St　　08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	562	1140	100	80	1410	90	250	382	90	100	289	949
Future Volume (veh/h)	562	1140	100	80	1410	90	250	382	90	100	289	949
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	573	1163	102	82	1439	92	255	390	92	102	295	968
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1096	70	134	1010	229	124	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3359	214	1767	4100	928	1767	5066	1520
Grp Volume(v), veh/h	573	626	639	82	752	779	255	318	164	102	295	968
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1810	1767	1689	1651	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	11.0	11.6	8.0	6.6	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	11.0	11.6	8.0	6.6	33.7
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	591	134	832	407	124	1219	710
V/C Ratio(X)	1.48	0.73	0.73	0.80	1.31	1.32	1.91	0.38	0.40	0.82	0.24	1.36
Avail Cap(c_a), veh/h	386	859	875	121	575	591	134	832	407	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	43.9	44.1	64.2	42.9	38.1
Incr Delay (d2), s/veh	231.0	3.5	3.5	23.2	150.6	154.8	434.2	1.3	2.9	14.5	0.5	172.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.4	17.4	17.8	3.6	44.0	45.8	20.9	4.8	5.1	4.1	2.8	57.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	285.7	32.0	32.0	88.4	197.7	202.0	498.9	45.2	47.1	78.7	43.3	211.0
LnGrp LOS	F	C	C	F	F	F	F	D	D	E	D	F
Approach Vol, veh/h		1838			1613			737			1365	
Approach Delay, s/veh		111.1			194.2			202.6			164.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	39.8	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.0	13.6	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.5	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	160.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

35: Harbor Dr & Laurel St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1416	2530	2930	96	85	100
Future Volume (veh/h)	1416	2530	2930	96	85	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1523	2720	3151	0	91	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4176	2755		153	136
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1523	2720	3151	0	91	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	5.9	7.9
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	5.9	7.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4176	2755		153	136
V/C Ratio(X)	1.83	0.65	1.14		0.59	0.79
Avail Cap(c_a), veh/h	834	4176	2755		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.9	52.9
Incr Delay (d2), s/veh	376.6	0.8	69.4	0.0	1.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	55.7	6.0	42.0	0.0	2.7	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	421.3	4.7	96.4	0.0	53.3	56.8
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4243	3151	A	199	
Approach Delay, s/veh		154.2	96.4		55.2	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		9.9	30.7	66.2
Green Ext Time (p_c), s		51.0		0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	127.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	86	120	209	175	244	260	1180	143	269	790	240
Future Volume (veh/h)	90	86	120	209	175	244	260	1180	143	269	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	90	125	218	182	254	271	1229	149	280	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	154	372	302	82	375	302	349	1095	132	315	1492	735
Arrive On Green	0.04	0.20	0.20	0.05	0.20	0.20	0.10	0.35	0.35	0.18	0.42	0.42
Sat Flow, veh/h	3428	1856	1510	1767	1856	1496	3428	3158	381	1767	3526	1570
Grp Volume(v), veh/h	94	90	125	218	182	254	271	684	694	280	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1510	1767	1856	1496	1714	1763	1777	1767	1763	1570
Q Serve(g_s), s	2.3	3.5	6.2	4.0	7.5	14.0	6.6	29.8	29.8	13.3	15.1	8.7
Cycle Q Clear(g_c), s	2.3	3.5	6.2	4.0	7.5	14.0	6.6	29.8	29.8	13.3	15.1	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	154	372	302	82	375	302	349	611	616	315	1492	735
V/C Ratio(X)	0.61	0.24	0.41	2.65	0.49	0.84	0.78	1.12	1.13	0.89	0.55	0.34
Avail Cap(c_a), veh/h	192	669	545	82	644	519	443	611	616	329	1492	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	28.9	30.0	41.0	30.3	33.0	37.6	28.1	28.1	34.5	18.6	14.5
Incr Delay (d2), s/veh	1.5	0.3	0.9	776.1	0.4	2.4	4.9	73.5	76.4	22.8	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.6	2.2	19.4	3.2	4.9	2.9	23.9	24.6	7.4	5.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	29.2	30.9	817.1	30.7	35.4	42.5	101.5	104.5	57.3	19.2	14.9
LnGrp LOS	D	C	C	F	C	D	D	F	F	E	B	B
Approach Vol, veh/h		309			654			1649			1353	
Approach Delay, s/veh		33.7			294.6			93.1			26.3	
Approach LOS		C			F			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	35.1	8.4	22.7	13.1	41.7	8.3	22.9
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	15.3	31.8	6.0	8.2	8.6	17.1	4.3	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.1	8.6	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	98.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1414	100	370	426	0	0	0	0	190	0	873
Future Volume (veh/h)	0	1414	100	370	426	0	0	0	0	190	0	873
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1537	109	402	463	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1537	109	402	463	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	32.1	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.1	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.67	0.11	1.19	0.17	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.62	0.62	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.7	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	103.7	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.2	1.0	9.3	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.9	7.7	151.9	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1646			865						207	A
Approach Delay, s/veh		12.5			70.7						55.5	
Approach LOS		B			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0
Max Q Clear Time (g_c+I1), s	13.8	34.1		15.8		2.0
Green Ext Time (p_c), s	0.0	4.7		0.1		2.1

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1029	575	0	0	496	310	300	10	440	0	0	0
Future Volume (veh/h)	1029	575	0	0	496	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1072	599	0	0	517	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1200	2365	0	0	562	350	420	13	385			
Arrive On Green	0.58	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2138	1275	1715	55	1572			
Grp Volume(v), veh/h	1072	599	0	0	445	395	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1558	1770	0	1572			
Q Serve(g_s), s	32.6	0.0	0.0	0.0	29.4	29.5	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	32.6	0.0	0.0	0.0	29.4	29.5	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.82	0.97		1.00			
Lane Grp Cap(c), veh/h	1200	2365	0	0	485	428	434	0	385			
V/C Ratio(X)	0.89	0.25	0.00	0.00	0.92	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1200	2365	0	0	521	461	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.0	0.0	0.0	0.0	42.2	42.2	41.8	0.0	45.3			
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	25.0	27.7	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.8	0.0	0.0	0.0	15.9	14.4	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	0.0	0.0	0.0	67.2	69.9	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1671			840			780				
Approach Delay, s/veh		15.3			68.5			109.8				
Approach LOS		B			E			F				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	86.0	34.0	47.5	38.5
Change Period (Y+Rc), s	5.5	4.6	5.5	* 5.5
Max Green Setting (Gmax), s	80.5	29.4	40.8	* 36
Max Q Clear Time (g_c+I1), s	2.0	31.4	34.6	31.5
Green Ext Time (p_c), s	2.8	0.0	2.5	1.5

Intersection Summary	
HCM 6th Ctrl Delay	51.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	762	10	1115	1059	0	416
Future Volume (veh/h)	762	10	1115	1059	0	416
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	829	0	1199	0	0	447
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	951	433	1667		0	1667
Arrive On Green	0.27	0.00	0.47	0.00	0.00	0.47
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	829	0	1199	0	0	447
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	12.3	0.0	14.9	0.0	0.0	4.2
Cycle Q Clear(g_c), s	12.3	0.0	14.9	0.0	0.0	4.2
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	951	433	1667		0	1667
V/C Ratio(X)	0.87	0.00	0.72		0.00	0.27
Avail Cap(c_a), veh/h	983	448	1667		0	1667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	11.6	0.0	0.0	8.8
Incr Delay (d2), s/veh	8.7	0.0	2.7	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	5.3	0.0	0.0	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.9	0.0	14.3	0.0	0.0	9.1
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	829		1199	A		447
Approach Delay, s/veh	27.9		14.3			9.1
Approach LOS	C		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	31.5	31.5	23.5
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	25.5	* 26	15.3
Max Q Clear Time (g_c+I1), s	16.9	6.2	14.3
Green Ext Time (p_c), s	6.0	4.6	0.5

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

1: Taylor St/Hotel Circle S

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	785
Future Volume (vph)	290	560	120	90	270	785
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	872

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	872
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	872
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.78
Capacity (veh/h)	552	608	598	547	1121
Control Delay (s)	16.9	68.7	12.4	16.8	16.2
Approach Delay (s)	51.0		12.4	16.4	
Approach LOS	F		B	C	

Intersection Summary			
Delay	29.9		
Level of Service	D		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

2: Taylor St & I-8 EB Ramps

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	869	560	645	260	290	40
Future Volume (veh/h)	869	560	645	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	934	602	694	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	797	1383	872		400	893
Arrive On Green	0.45	0.75	0.25	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	934	602	694	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	40.8	11.1	16.7	0.0	8.0	1.1
Cycle Q Clear(g_c), s	40.8	11.1	16.7	0.0	8.0	1.1
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	797	1383	872		400	893
V/C Ratio(X)	1.17	0.44	0.80		0.78	0.05
Avail Cap(c_a), veh/h	797	1549	1189		834	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	4.3	31.9	0.0	38.8	8.7
Incr Delay (d2), s/veh	90.3	0.1	1.8	0.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.9	3.2	7.1	0.0	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	115.1	4.4	33.7	0.0	40.1	8.7
LnGrp LOS	F	A	C		D	A
Approach Vol, veh/h		1536	694	A	355	
Approach Delay, s/veh		71.7	33.7		36.3	
Approach LOS		E	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		73.4		17.0	45.0	28.4
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		13.1		10.0	42.8	18.7
Green Ext Time (p_c), s		2.8		0.6	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	56.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050A + P2 PM | Old Town Complex
3: Taylor St & Morena Blvd/Whitman St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	527	0	0	20	715	1119	5	10	545	100
Future Volume (veh/h)	330	30	527	0	0	20	715	1119	5	10	545	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	586				794	1243	6	11	606	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	816	0	910				1235	2145	10	19	710	130
Arrive On Green	0.23	0.00	0.23				0.72	1.00	1.00	0.01	0.24	0.24
Sat Flow, veh/h	3534	0	1487				3428	3597	17	1767	2946	538
Grp Volume(v), veh/h	391	0	586				794	609	640	11	362	355
Grp Sat Flow(s),veh/h/ln	1767	0	1487				1714	1763	1852	1767	1763	1721
Q Serve(g_s), s	8.6	0.0	0.0				10.9	0.0	0.0	0.6	17.6	17.8
Cycle Q Clear(g_c), s	8.6	0.0	0.0				10.9	0.0	0.0	0.6	17.6	17.8
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.31
Lane Grp Cap(c), veh/h	816	0	910				1235	1051	1104	19	425	415
V/C Ratio(X)	0.48	0.00	0.64				0.64	0.58	0.58	0.58	0.85	0.86
Avail Cap(c_a), veh/h	1178	0	1062				1235	1051	1104	100	460	449
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	12.0				9.6	0.0	0.0	44.3	32.6	32.7
Incr Delay (d2), s/veh	0.7	0.0	1.5				0.1	0.2	0.2	10.1	18.9	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	15.0				2.5	0.1	0.1	0.3	9.6	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	0.0	13.5				9.6	0.2	0.2	54.4	51.5	52.4
LnGrp LOS	C	A	B				A	A	A	D	D	D
Approach Vol, veh/h		977						2043			728	
Approach Delay, s/veh		20.4						3.9			52.0	
Approach LOS		C						A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	58.6		26.1	37.3	26.6		
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9		
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24		
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.6	12.9	19.8		
Green Ext Time (p_c), s	0.0	12.8		7.0	1.3	1.9		

Intersection Summary		
HCM 6th Ctrl Delay		17.5
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P2 PM | Old Town Complex
4: Taylor St & Juan St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	119	10	310	10	1494	131	270	812	20
Future Volume (veh/h)	20	10	10	119	10	310	10	1494	131	270	812	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	124	10	323	10	1556	136	281	846	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	94	75	167	25	341	17	1471	128	352	1781	44
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.01	0.31	0.31	0.20	0.51	0.51
Sat Flow, veh/h	425	289	231	357	78	1049	1767	4712	411	1767	3511	87
Grp Volume(v), veh/h	41	0	0	457	0	0	10	1115	577	281	425	442
Grp Sat Flow(s),veh/h/ln	945	0	0	1484	0	0	1767	1689	1747	1767	1763	1835
Q Serve(g_s), s	0.0	0.0	0.0	23.9	0.0	0.0	0.5	28.1	28.1	13.6	14.1	14.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	27.0	0.0	0.0	0.5	28.1	28.1	13.6	14.1	14.1
Prop In Lane	0.51		0.24	0.27		0.71	1.00		0.24	1.00		0.05
Lane Grp Cap(c), veh/h	368	0	0	533	0	0	17	1054	545	352	894	931
V/C Ratio(X)	0.11	0.00	0.00	0.86	0.00	0.00	0.58	1.06	1.06	0.80	0.48	0.48
Avail Cap(c_a), veh/h	380	0	0	547	0	0	102	1054	545	352	894	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.30	0.30	0.30	0.71	0.71	0.71
Uniform Delay (d), s/veh	21.0	0.0	0.0	29.5	0.0	0.0	44.4	31.0	31.0	34.3	14.4	14.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	11.9	0.0	0.0	3.3	33.1	38.6	8.3	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	11.0	0.0	0.0	0.2	15.8	17.2	6.5	5.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	41.4	0.0	0.0	47.7	64.0	69.6	42.6	15.7	15.6
LnGrp LOS	C	A	A	D	A	A	D	F	F	D	B	B
Approach Vol, veh/h		41			457			1702			1148	
Approach Delay, s/veh		21.0			41.4			65.8			22.2	
Approach LOS		C			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	33.0		34.2	5.3	50.5		34.2
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.6	30.1		3.4	2.5	16.1		29.0
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	7.9		0.3

Intersection Summary		
HCM 6th Ctrl Delay		47.0
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

5: Congress St & Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1305	190	200	791	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1305	190	200	791	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1359	198	208	824	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1405	205	161	1590	0	468	0	411	0	496	0
Arrive On Green	0.00	0.41	0.41	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3562	500	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	1053	504	208	824	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1271	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	23.7	23.8	5.6	11.1	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.7	23.8	5.6	11.1	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Prop In Lane	0.00		0.39	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1089	521	161	1590	0	468	0	411	0	496	0
V/C Ratio(X)	0.00	0.97	0.97	1.29	0.52	0.00	0.49	0.00	0.84	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1089	521	161	1590	0	761	0	755	0	939	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.7	17.7	27.8	8.0	0.0	19.9	0.0	21.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	19.7	31.2	168.1	0.1	0.0	0.3	0.0	1.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.2	10.5	9.8	2.6	0.0	2.7	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	37.4	48.9	195.9	8.1	0.0	20.2	0.0	22.9	0.0	0.0	0.0
LnGrp LOS	A	D	D	F	A	A	C	A	C	A	A	A
Approach Vol, veh/h		1557			1032			573			0	
Approach Delay, s/veh		41.1			45.9			21.9			0.0	
Approach LOS		D			D			C				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	30.0	21.3	40.0	21.3
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	7.6	25.8	0.0	13.1	14.9
Green Ext Time (p_c), s	0.0	0.0	0.0	4.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

6: Pacific Hwy & Rosecrans St/Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	640	190	621	390	100	260	539	815	200	651	200
Future Volume (veh/h)	226	640	190	621	390	100	260	539	815	200	651	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	240	681	202	661	415	106	277	573	867	213	693	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	240	681	202	661	415	106	277	573	867	213	693	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	18.0	36.8	16.0	22.4	16.1
Cycle Q Clear(g_c), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	18.0	36.8	16.0	22.4	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	1.49	0.88	0.40	1.83	0.89	0.29	1.37	0.57	1.77	1.24	0.67	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	44.7	28.8	56.1	41.8	33.0	57.3	39.6	38.2	56.7	40.2	38.0
Incr Delay (d2), s/veh	250.6	11.6	0.6	385.5	17.5	0.2	195.3	0.8	353.8	147.2	1.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	11.7	4.7	25.2	14.8	2.5	17.6	7.9	63.5	12.5	9.6	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	309.4	56.4	29.4	441.6	59.2	33.2	252.6	40.4	392.0	203.9	41.6	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1123			1182			1717			1119	
Approach Delay, s/veh		105.6			270.7			252.2			71.9	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	32.4	16.8	24.4	13.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	2.8	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	185.2
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	73.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	1026	610	290
Future Vol, veh/h	120	70	200	1026	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1103	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1814	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 77	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 52	357	691	-	-	-
Mov Cap-2 Maneuver	~ 52	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 881.2	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	76	-	-
HCM Lane V/C Ratio	0.311	-	2.688	-	-
HCM Control Delay (s)	12.5	-	$ 881.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	420	370	2469	0	0	2665	470
Future Volume (veh/h)	0	0	0	140	660	420	370	2469	0	0	2665	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	506	446	2975	0	0	3211	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	499	332	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				381	1813	1206	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				814	0	656	446	2975	0	0	3211	566
Grp Sat Flow(s),veh/h/ln				1836	0	1564	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.21		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	430	150	3362	0	0	2792	836
V/C Ratio(X)				1.61	0.00	1.53	2.97	0.88	0.00	0.00	1.15	0.68
Avail Cap(c_a), veh/h				505	0	430	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.11	0.11	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				284.4	0.0	247.9	888.1	0.4	0.0	0.0	72.1	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				60.3	0.0	47.0	42.6	0.1	0.0	0.0	53.5	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				342.4	0.0	305.9	954.5	0.4	0.0	0.0	108.0	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1470			3421			3777	
Approach Delay, s/veh					326.1			124.8			96.3	
Approach LOS					F			F			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2
Green Ext Time (p_c), s		21.2		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	146.5
HCM 6th LOS	F

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2409	40	280	2405	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2409	40	280	2405	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2484	41	289	2479	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2626	43	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5298	84	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1632	893	289	2479	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1838	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	73.1	73.8	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	73.1	73.8	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	941	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.94	0.95	1.56	0.60	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	941	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	36.9	37.1	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	1.5	2.8	253.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	29.7	33.0	19.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	38.4	39.9	316.5	0.1	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2525			2768	
Approach Delay, s/veh		91.1						38.9			33.1	
Approach LOS		F						D			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	75.8	49.1	2.0
Green Ext Time (p_c), s	0.0	4.1	0.0	12.7

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	460	30	552	0	290	0	946	543	120	670	0
Future Volume (veh/h)	210	460	30	552	0	290	0	946	543	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	484	32	581	0	305	0	996	572	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	386	26	0	0	0	0	1360	727	200	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1709	113		0		0	2185	1118	1767	3618	0
Grp Volume(v), veh/h	221	0	516		0.0		0	828	740	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1822				0	1763	1448	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	49.6	58.6	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	49.6	58.6	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	941	200	2514	0
V/C Ratio(X)	0.55	0.00	1.25				0.00	0.72	0.79	0.63	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	941	216	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	18.5	20.1	26.6	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	116.6				0.0	0.4	0.6	3.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	30.1				0.0	19.9	19.4	3.1	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	178.6				0.0	18.8	20.7	30.1	8.5	0.0
LnGrp LOS	D	A	F				A	B	C	C	A	A
Approach Vol, veh/h		737						1568			831	
Approach Delay, s/veh		141.5						19.7			11.8	
Approach LOS		F						B			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	15.7	60.6	38.1	13.5
Green Ext Time (p_c), s	0.0	4.8	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	617	288	488	594	30	323	1879	655	0	1865	770
Future Volume (veh/h)	570	617	288	488	594	30	323	1879	655	0	1865	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	430	937	313	403	824	33	351	2042	712	0	2027	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	410	861	345	299	600	24	315	1846	580	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	1767	3711	1488	1767	3540	142	3428	3782	1187	0	5233	1572
Grp Volume(v), veh/h	430	937	313	403	432	425	351	1799	955	0	2027	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1826	1714	1689	1592	0	1689	1572
Q Serve(g_s), s	37.1	37.1	32.8	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	37.1	37.1	32.8	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.75	0.00		1.00
Lane Grp Cap(c), veh/h	410	861	345	299	314	309	315	1648	777	0	1836	
V/C Ratio(X)	1.05	1.09	0.91	1.35	1.37	1.37	1.11	1.09	1.23	0.00	1.10	
Avail Cap(c_a), veh/h	410	861	345	299	314	309	315	1648	777	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.17	0.17	0.17	0.09	0.09	0.09	0.00	0.76	0.00
Uniform Delay (d), s/veh	61.4	61.5	59.8	75.5	75.5	75.5	65.3	1.9	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	58.0	57.8	26.1	159.8	171.9	172.1	56.1	42.3	103.9	0.0	53.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	24.4	14.9	26.3	28.7	28.2	8.2	10.4	23.2	0.0	33.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.4	119.2	85.9	235.3	247.4	247.6	121.4	44.2	105.8	0.0	104.6	0.0
LnGrp LOS	F	F	F	F	F	F	F	F	F	A	F	
Approach Vol, veh/h		1680			1260			3105			2027	A
Approach Delay, s/veh		113.1			243.6			71.9			104.6	
Approach LOS		F			F			E			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.7	60.0		29.1
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	115.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	519	190	202	712	482	260	1855	130	653	1356	182
Future Volume (veh/h)	399	519	190	202	712	482	260	1855	130	653	1356	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	424	552	202	215	757	513	277	1973	138	695	1443	194
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	626	268	265	734	311	317	1988	138	1113	2915	392
Arrive On Green	0.12	0.18	0.18	0.15	0.21	0.21	0.09	0.41	0.41	0.65	1.00	1.00
Sat Flow, veh/h	3428	3526	1507	1767	3526	1493	3428	4826	336	3428	4504	605
Grp Volume(v), veh/h	424	552	202	215	757	513	277	1377	734	695	1082	555
Grp Sat Flow(s),veh/h/ln	1714	1763	1507	1767	1763	1493	1714	1689	1785	1714	1689	1732
Q Serve(g_s), s	19.6	24.4	21.4	18.8	33.3	24.9	12.8	64.8	65.7	19.1	0.0	0.0
Cycle Q Clear(g_c), s	19.6	24.4	21.4	18.8	33.3	24.9	12.8	64.8	65.7	19.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.35
Lane Grp Cap(c), veh/h	420	626	268	265	734	311	317	1391	735	1113	2185	1121
V/C Ratio(X)	1.01	0.88	0.75	0.81	1.03	1.65	0.87	0.99	1.00	0.62	0.49	0.50
Avail Cap(c_a), veh/h	420	729	312	265	734	311	334	1391	735	1113	2185	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.36	0.36	0.36	0.09	0.09	0.09
Uniform Delay (d), s/veh	70.2	64.1	68.8	65.8	63.4	35.5	71.7	46.7	47.0	22.3	0.0	0.0
Incr Delay (d2), s/veh	46.3	10.0	6.9	16.1	41.6	306.8	8.5	12.4	19.4	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	11.9	8.8	9.7	19.2	35.7	6.0	29.2	32.6	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.5	74.1	75.7	81.9	105.0	342.3	80.2	59.1	66.4	22.4	0.1	0.1
LnGrp LOS	F	E	E	F	F	F	F	E	E	C	A	A
Approach Vol, veh/h		1178			1485			2388			2332	
Approach Delay, s/veh		89.7			183.6			63.8			6.7	
Approach LOS		F			F			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	57.6	70.8	28.9	33.3	19.2	109.2	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	21.1	67.7	20.8	26.4	14.8	2.0	21.6	35.3
Green Ext Time (p_c), s	0.2	0.0	0.0	1.1	0.0	4.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	74.0
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	319	20	555	402	120	30	1628	747	160	1283	415
Future Volume (veh/h)	327	319	20	555	402	120	30	1628	747	160	1283	415
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	341	332	21	578	419	125	31	1696	778	167	1336	432
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	316	413	26	617	441	361	41	2017	610	210	1537	658
Arrive On Green	0.18	0.24	0.24	0.18	0.24	0.24	0.02	0.40	0.40	0.02	0.14	0.14
Sat Flow, veh/h	1767	1723	109	3428	1856	1520	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	341	0	353	578	419	125	31	1696	778	167	1336	432
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1714	1856	1520	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	28.6	0.0	29.0	26.6	35.6	9.2	2.8	48.5	63.7	7.8	59.3	24.5
Cycle Q Clear(g_c), s	28.6	0.0	29.0	26.6	35.6	9.2	2.8	48.5	63.7	7.8	59.3	24.5
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	0	439	617	441	361	41	2017	610	210	1537	658
V/C Ratio(X)	1.08	0.00	0.80	0.94	0.95	0.35	0.75	0.84	1.27	0.80	0.87	0.66
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2017	610	249	1537	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.58	0.58	0.58	1.00	1.00	1.00	0.64	0.64	0.64
Uniform Delay (d), s/veh	65.7	0.0	57.3	64.7	60.1	36.1	77.7	43.6	48.1	77.4	64.0	18.3
Incr Delay (d2), s/veh	73.5	0.0	9.4	13.3	19.0	0.1	9.9	4.4	135.9	7.9	4.6	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.4	0.0	14.7	12.8	19.1	3.5	1.4	20.9	47.2	3.8	29.3	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.2	0.0	66.7	78.0	79.1	36.2	87.6	48.0	184.1	85.3	68.7	21.6
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	C
Approach Vol, veh/h		694			1122			2505			1935	
Approach Delay, s/veh		102.3			73.7			90.8			59.6	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	69.4	33.2	43.2	8.1	75.4	33.5	42.9
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	19.8	65.7	28.6	31.0	4.8	61.3	30.6	37.6
Green Ext Time (p_c), s	0.0	0.0	0.2	0.5	0.0	1.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	79.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1066	190	450	967	140	450
Future Volume (veh/h)	1066	190	450	967	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1171	209	495	1063	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	996	177	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3061	526	1767	3618	373	1199
Grp Volume(v), veh/h	692	688	495	1063	650	0
Grp Sat Flow(s),veh/h/ln	1763	1731	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	18.3	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	18.3	32.1	0.0
Prop In Lane		0.30	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	581	432	2173	457	0
V/C Ratio(X)	1.17	1.18	1.15	0.49	1.42	0.00
Avail Cap(c_a), veh/h	592	581	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.6	39.2	0.0
Incr Delay (d2), s/veh	93.4	99.1	89.8	0.2	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.9	31.3	22.4	6.8	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	130.1	135.8	131.6	11.8	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1380			1558	650	
Approach Delay, s/veh	133.0			49.9	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.0	42.5				73.5		37.0
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	27.0	* 37				67.6		32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1				20.3		34.1
Green Ext Time (p_c), s	0.0	0.0				10.2		0.0

Intersection Summary	
HCM 6th Ctrl Delay	116.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	15.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	332	1654	30	0	1605
Future Vol, veh/h	0	332	1654	30	0	1605
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	342	1705	31	0	1655

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	888	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 285	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	~ 280	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	165.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	280	-
HCM Lane V/C Ratio	-	-	1.222	-
HCM Control Delay (s)	-	-	165.8	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	15.9	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1416	1362	1684	1440	165
Future Volume (veh/h)	0	1416	1362	1684	1440	165
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1460	1404	1736	1485	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1492	1492	1268	1371	
Arrive On Green	0.00	0.42	0.42	0.42	0.40	0.00
Sat Flow, veh/h	0	3711	3618	1509	3428	1572
Grp Volume(v), veh/h	0	1460	1404	1736	1485	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1509	1714	1572
Q Serve(g_s), s	0.0	24.5	22.9	25.4	24.0	0.0
Cycle Q Clear(g_c), s	0.0	24.5	22.9	25.4	24.0	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1492	1492	1268	1371	
V/C Ratio(X)	0.00	0.98	0.94	1.37	1.08	
Avail Cap(c_a), veh/h	0	1492	1492	1268	1371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	17.0	16.6	3.2	18.0	0.0
Incr Delay (d2), s/veh	0.0	18.3	12.0	171.2	50.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	10.3	77.8	17.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	35.3	28.6	174.4	68.1	0.0
LnGrp LOS	A	D	C	F	F	
Approach Vol, veh/h		1460	3140		1485	A
Approach Delay, s/veh		35.3	109.2		68.1	
Approach LOS		D	F		E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		29.2		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		26.5		26.0		27.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.4
HCM 6th LOS	F

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	90	5	60	90	1304	30	50	1292	110
Future Volume (veh/h)	80	0	100	90	5	60	90	1304	30	50	1292	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	102	6	68	102	1482	34	57	1468	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	32	186	430	29	324	130	2251	52	77	1953	166
Arrive On Green	0.23	0.00	0.23	0.23	0.23	0.23	0.07	0.44	0.44	0.04	0.41	0.41
Sat Flow, veh/h	507	141	812	1258	125	1416	1767	5089	117	1767	4737	403
Grp Volume(v), veh/h	205	0	0	102	0	74	102	983	533	57	1047	546
Grp Sat Flow(s),veh/h/ln	1460	0	0	1258	0	1541	1767	1689	1829	1767	1689	1763
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	2.0	2.9	11.8	11.8	1.6	13.6	13.6
Cycle Q Clear(g_c), s	6.3	0.0	0.0	3.5	0.0	2.0	2.9	11.8	11.8	1.6	13.6	13.6
Prop In Lane	0.44		0.56	1.00		0.92	1.00		0.06	1.00		0.23
Lane Grp Cap(c), veh/h	435	0	0	430	0	353	130	1494	809	77	1392	727
V/C Ratio(X)	0.47	0.00	0.00	0.24	0.00	0.21	0.79	0.66	0.66	0.74	0.75	0.75
Avail Cap(c_a), veh/h	992	0	0	926	0	960	185	1494	809	230	1495	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	0.0	16.6	0.0	16.1	23.5	11.3	11.3	24.4	12.9	12.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.1	8.1	1.2	2.2	5.3	2.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.9	0.0	0.6	1.4	3.8	4.3	0.7	4.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	0.0	16.7	0.0	16.2	31.6	12.5	13.5	29.6	15.0	16.9
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		205			176			1618			1650	
Approach Delay, s/veh		17.9			16.5			14.0			16.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	28.2		16.7	8.2	26.6		16.7
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.6	13.8		8.3	4.9	15.6		5.5
Green Ext Time (p_c), s	0.0	6.1		0.8	0.0	5.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	399.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	873	612	1184	1492	30
Future Vol, veh/h	0	873	612	1184	1492	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	919	644	1246	1571	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	822	1613	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 271	~ 194	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 266	~ 192	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1141.9	$ 378.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 192	-	266	-	-
HCM Lane V/C Ratio	3.355	-	3.455	-	-
HCM Control Delay (s)	$ 1109.7	-	$ 1141.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	60.5	-	85.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	192.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	622	0	2453	2322	264
Future Vol, veh/h	0	622	0	2453	2322	264
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	641	0	2529	2394	272

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1354	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 138	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 135	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1752.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	135	-	-
HCM Lane V/C Ratio	-	4.75	-	-
HCM Control Delay (s)	-	$ 1752.3	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	66.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	20	120	150	60	110	280	2112	20	42	2749	153
Future Volume (veh/h)	209	20	120	150	60	110	280	2112	20	42	2749	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	232	22	133	167	67	122	311	2347	22	47	3054	170
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1567	672	60	1254	69
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.44	0.44	0.03	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1511	1767	3389	186
Grp Volume(v), veh/h	232	22	133	167	67	122	311	2347	22	47	1571	1653
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1511	1767	1763	1812
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	62.2	1.1	3.7	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	62.2	1.1	3.7	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1567	672	60	652	671
V/C Ratio(X)	1.73	0.05	0.34	0.87	0.13	0.34	1.52	1.50	0.03	0.78	2.41	2.47
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1567	672	72	652	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	38.9	21.9	67.1	44.1	44.1
Incr Delay (d2), s/veh	359.4	0.0	0.2	14.2	0.0	0.2	257.7	227.4	0.0	29.4	638.2	664.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	0.6	3.9	6.6	1.8	3.4	21.9	75.9	0.4	2.2	138.0	146.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	424.1	40.3	43.6	75.7	37.8	40.5	319.6	266.3	21.9	96.5	682.3	708.1
LnGrp LOS	F	D	D	E	D	D	F	F	C	F	F	F
Approach Vol, veh/h		387			356			2680			3271	
Approach Delay, s/veh		271.5			56.5			270.4			687.0	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	70.9	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	5.7	64.2	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		462.7
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7817.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2820	2627	2412	2829	190
Future Vol, veh/h	0	2820	2627	2412	2829	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	3133	2919	2680	3143	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1592	3364	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 95	~ 79	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 93	~ 78	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 14794.8	$ 8595.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 78	-	93	-	-
HCM Lane V/C Ratio	37.422	-	33.692	-	-
HCM Control Delay (s)	$ 16488.2	-	$ 14794.8	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	358.2	-	383.1	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	309	230	350	10	512	60	270	10	130	50
Future Volume (veh/h)	10	150	309	230	350	10	512	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	325	242	368	11	539	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	181	372	177	629	19	497	47	211	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	514	1057	897	1789	53	825	96	435	33	1267	466
Grp Volume(v), veh/h	11	0	483	242	0	379	886	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1571	897	0	1843	1356	0	0	1766	0	0
Q Serve(g_s), s	0.6	0.0	17.3	3.8	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	17.3	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.03	0.61		0.32	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	552	177	0	648	754	0	0	920	0	0
V/C Ratio(X)	0.04	0.00	0.87	1.37	0.00	0.58	1.17	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	552	177	0	648	754	0	0	920	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	18.2	29.4	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	15.0	196.4	0.0	1.4	92.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.8	12.1	0.0	4.0	29.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	33.2	225.7	0.0	17.3	109.1	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		494			621			886			201	
Approach Delay, s/veh		32.9			98.5			109.1			9.0	
Approach LOS		C			F			F			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		34.0		26.0		34.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		21.1		29.1		21.1		29.1				
Max Q Clear Time (g_c+I1), s		19.3		6.0		23.1		31.1				
Green Ext Time (p_c), s		0.8		0.8		0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	1076	552	50	0	539	280
Future Volume (veh/h)	5	10	30	80	190	310	1076	552	50	0	539	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	1170	600	54	0	586	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1064	96	0	366	190
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1672	150	0	1140	592
Grp Volume(v), veh/h	49	0	0	631	0	0	1170	0	654	0	0	890
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1822	0	0	1732
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	16.3	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	16.3	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.08	0.00		0.34
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	2.55	0.00	0.56	0.00	0.00	1.60
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.3	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	702.3	0.0	0.4	0.0	0.0	278.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	98.0	0.0	5.4	0.0	0.0	53.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	731.9	0.0	8.7	0.0	0.0	305.3
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1824			890	
Approach Delay, s/veh		23.8			251.2			472.6			305.3	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	55.8	24.2	25.2	30.6	24.2
Change Period (Y+Rc), s	4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	50.9	19.3	20.8	25.7	19.3
Max Q Clear Time (g_c+I1), s	18.3	3.9	22.8	27.7	21.3
Green Ext Time (p_c), s	3.2	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	381.1
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	387
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	961	0	1063	289	0
Future Vol, veh/h	530	961	0	1063	289	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	1068	0	1181	321	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	345.4	544.2	23.3
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1063	530	961	289
LT Vol	0	530	0	0
Through Vol	1063	0	0	289
RT Vol	0	0	961	0
Lane Flow Rate	1181	589	1068	321
Geometry Grp	2	7	7	2
Degree of Util (X)	2.164	1.259	1.927	0.624
Departure Headway (Hd)	6.167	9.623	8.371	7.982
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	602	383	448	456
Service Time	4.167	7.323	6.071	5.982
HCM Lane V/C Ratio	1.962	1.538	2.384	0.704
HCM Control Delay	544.2	164.7	445	23.3
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	90.2	20.7	55.4	4.2

Intersection	
Intersection Delay, s/veh	417
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	967	89	110	20	993	5	242	10	5	5
Future Vol, veh/h	10	400	967	89	110	20	993	5	242	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	1018	94	116	21	1045	5	255	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	290.4	23.3	633.5	15
HCM LOS	F	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	80%	2%	0%	41%	50%
Vol Thru, %	0%	98%	0%	50%	25%
Vol Right, %	20%	0%	100%	9%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1240	410	967	219	20
LT Vol	993	10	0	89	10
Through Vol	5	400	0	110	5
RT Vol	242	0	967	20	5
Lane Flow Rate	1305	432	1018	231	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	2.36	0.848	1.799	0.466	0.048
Departure Headway (Hd)	6.83	10.322	9.572	11.029	11.465
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	548	354	387	330	314
Service Time	4.83	8.022	7.272	9.029	9.465
HCM Lane V/C Ratio	2.381	1.22	2.63	0.7	0.067
HCM Control Delay	633.5	50.3	392.2	23.3	15
HCM Lane LOS	F	F	F	C	B
HCM 95th-tile Q	94.5	7.7	43.4	2.4	0.2

Intersection	
Intersection Delay, s/veh	540.8
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	1180	145	916
Future Vol, veh/h	60	70	200	1180	145	916
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	1439	177	1117
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	14.4	721	370.8
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	14%	100%	0%	0%
Vol Thru, %	86%	0%	0%	14%
Vol Right, %	0%	0%	100%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1380	60	70	1061
LT Vol	200	60	0	0
Through Vol	1180	0	0	145
RT Vol	0	0	70	916
Lane Flow Rate	1683	73	85	1294
Geometry Grp	2	7	7	2
Degree of Util (X)	2.559	0.166	0.165	1.771
Departure Headway (Hd)	6.292	10.485	9.206	6.491
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	589	345	393	569
Service Time	4.292	8.185	6.906	4.491
HCM Lane V/C Ratio	2.857	0.212	0.216	2.274
HCM Control Delay	721	15.3	13.7	370.8
HCM Lane LOS	F	C	B	F
HCM 95th-tile Q	116.2	0.6	0.6	59.6

Intersection	
Intersection Delay, s/veh	272.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	57	960	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	57	960	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	68	1143	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	468.3	52.5	22.5
HCM LOS	-	F	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	26%
Vol Thru, %	100%	0%	100%	6%	74%
Vol Right, %	0%	100%	0%	93%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	1027	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	57	160
RT Vol	0	250	0	960	0
Lane Flow Rate	500	298	0	1223	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.975	0.522	0	1.995	0.509
Departure Headway (Hd)	9.525	8.791	10.489	5.874	9.771
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	385	414	0	624	371
Service Time	7.225	6.491	8.489	3.95	7.771
HCM Lane V/C Ratio	1.299	0.72	0	1.96	0.69
HCM Control Delay	71.5	20.7	13.5	468.3	22.5
HCM Lane LOS	F	C	N	F	C
HCM 95th-tile Q	11.2	2.9	0	80.9	2.8

Intersection	
Intersection Delay, s/veh	138.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	182	240	150	0	0	0	150	120	250	330	140	139
Future Vol, veh/h	182	240	150	0	0	0	150	120	250	330	140	139
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	200	264	165	0	0	0	165	132	275	363	154	153
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	139	93.9	175.7
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	32%	54%
Vol Thru, %	23%	42%	23%
Vol Right, %	48%	26%	23%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	572	609
LT Vol	150	182	330
Through Vol	120	240	140
RT Vol	250	150	139
Lane Flow Rate	571	629	669
Geometry Grp	1	1	1
Degree of Util (X)	1.082	1.214	1.305
Departure Headway (Hd)	7.87	7.552	7.779
Convergence, Y/N	Yes	Yes	Yes
Cap	469	484	475
Service Time	5.87	5.552	5.779
HCM Lane V/C Ratio	1.217	1.3	1.408
HCM Control Delay	93.9	139	175.7
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.2	22.4	26.3

Year 2050A + P2 PM | Old Town Complex
29: Washington St & San Diego Ave | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2128	0	0	745	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2128	0	0	745	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2240	0	0	784	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2240	0	0	784	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	12.4	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	12.4	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.92	0.00	0.00	0.45	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	14.2	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.7	0.0	0.0	0.8	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.2	0.0	0.0	4.8	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.7	0.0	0.0	15.0	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2724			1500	
Approach Delay, s/veh					32.0			7.0			28.3	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.4			17.0	47.4		21.6
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			14.0	40.3		11.9
Green Ext Time (p_c), s		37.9			0.0	0.0		2.0

Intersection Summary		
HCM 6th Ctrl Delay		16.6
HCM 6th LOS		B

Year 2050A + P2 PM | Old Town Complex
30: Washington St & Hancock St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1248	170	300	655	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1248	170	300	655	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1287	175	309	675	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1287	175	309	675	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	13.5	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	13.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.30	0.42	0.90	0.48	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.59	0.59	0.86	0.86	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	14.1	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	140.8	1.8	22.4	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	28.9	2.8	4.2	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	168.7	23.0	60.7	15.1	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1462			984	
Approach Delay, s/veh		43.7						151.3			29.4	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	35.0		38.0		48.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	9.7	32.1		35.1		15.5
Green Ext Time (p_c), s	0.0	0.0		0.0		5.7

Intersection Summary		
HCM 6th Ctrl Delay		74.7
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

31: Washington St & Pacific Hwy (N)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	1098	0	0	620	315
Future Volume (veh/h)	120	0	150	80	70	200	230	1098	0	0	620	315
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1156	0	0	653	332
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	39	0	49	373	391	313	202	1513	0	0	1019	437
Arrive On Green	0.05	0.00	0.05	0.21	0.21	0.21	0.11	0.54	0.00	0.00	0.36	0.36
Sat Flow, veh/h	727	0	911	1767	1856	1484	1767	2897	0	0	2897	1211
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1156	0	0	653	332
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1484	1767	1411	0	0	1411	1211
Q Serve(g_s), s	4.0	0.0	0.0	2.9	2.4	9.7	8.5	23.9	0.0	0.0	14.3	17.9
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.9	2.4	9.7	8.5	23.9	0.0	0.0	14.3	17.9
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	88	0	0	373	391	313	202	1513	0	0	1019	437
V/C Ratio(X)	3.22	0.00	0.00	0.23	0.19	0.67	1.20	0.76	0.00	0.00	0.64	0.76
Avail Cap(c_a), veh/h	88	0	0	618	649	519	202	1732	0	0	1223	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	0.0	24.3	24.1	27.0	32.9	13.5	0.0	0.0	19.7	20.9
Incr Delay (d2), s/veh	1028.8	0.0	0.0	0.1	0.1	0.9	126.7	1.5	0.0	0.0	1.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.7	0.0	0.0	1.2	1.0	3.4	10.6	6.9	0.0	0.0	4.5	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1064.0	0.0	0.0	24.4	24.2	27.9	159.6	15.0	0.0	0.0	20.7	26.5
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	C
Approach Vol, veh/h		284			369			1398			985	
Approach Delay, s/veh		1064.0			26.4			40.1			22.7	
Approach LOS		F			C			D			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		44.2		8.0	13.0	31.2		22.1				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0				
Max Q Clear Time (g_c+I1), s		25.9		6.0	10.5	19.9		11.7				
Green Ext Time (p_c), s		6.0		0.0	0.0	5.3		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	128.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

32: Washington St & Pacific Hwy (S)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	838	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	838	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	992	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1214	0	865				0	635	116	331	632	0
Arrive On Green	0.34	0.00	0.34				0.00	0.22	0.22	0.19	0.19	0.00
Sat Flow, veh/h	3534	0	1530				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	992	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1530				0	1763	1715	1767	1689	0
Q Serve(g_s), s	14.7	0.0	1.8				0.0	9.4	9.5	10.7	2.7	0.0
Cycle Q Clear(g_c), s	14.7	0.0	1.8				0.0	9.4	9.5	10.7	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1214	0	865				0	381	371	331	632	0
V/C Ratio(X)	0.82	0.00	0.12				0.00	0.80	0.81	1.07	0.30	0.00
Avail Cap(c_a), veh/h	1903	0	1164				0	431	420	331	632	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	6.0				0.0	21.3	21.3	23.3	20.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	8.0	8.8	69.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.8				0.0	4.4	4.4	10.5	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	6.0				0.0	29.2	30.1	92.9	20.3	0.0
LnGrp LOS	B	A	A				A	C	C	F	C	A
Approach Vol, veh/h		1096						604			542	
Approach Delay, s/veh		16.8						29.6			67.7	
Approach LOS		B						C			E	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				16.4		25.8		15.0				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		30.8		10.7				
Max Q Clear Time (g_c+I1), s				11.5		16.7		12.7				
Green Ext Time (p_c), s				0.7		2.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	139	270	666	70	262	1346	80
Future Volume (veh/h)	100	290	140	430	420	139	270	666	70	262	1346	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	142	276	680	71	267	1373	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	103	425	422	280	449	149	108	1092	113	176	1439	86
Arrive On Green	0.06	0.28	0.28	0.19	0.41	0.41	0.06	0.24	0.24	0.12	0.29	0.29
Sat Flow, veh/h	1767	1537	1525	1464	1097	363	1767	4634	479	1464	4878	291
Grp Volume(v), veh/h	102	296	143	439	0	571	276	493	258	267	950	505
Grp Sat Flow(s),veh/h/ln	1767	1537	1525	1464	0	1460	1767	1689	1736	1464	1689	1793
Q Serve(g_s), s	6.2	18.6	8.1	20.6	0.0	40.9	6.6	14.1	14.4	13.0	29.8	29.8
Cycle Q Clear(g_c), s	6.2	18.6	8.1	20.6	0.0	40.9	6.6	14.1	14.4	13.0	29.8	29.8
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.28	1.00		0.16
Lane Grp Cap(c), veh/h	103	425	422	280	0	598	108	795	409	176	996	529
V/C Ratio(X)	0.99	0.70	0.34	1.57	0.00	0.96	2.55	0.62	0.63	1.51	0.95	0.95
Avail Cap(c_a), veh/h	103	456	452	280	0	627	108	796	409	176	996	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	34.9	31.1	43.6	0.0	30.9	50.6	36.9	37.0	47.4	37.3	37.3
Incr Delay (d2), s/veh	84.4	3.4	0.2	273.0	0.0	24.8	724.6	2.0	4.1	257.7	18.7	28.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.3	3.0	28.6	0.0	18.0	24.7	6.0	6.5	17.3	14.6	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.1	38.3	31.3	316.6	0.0	55.7	775.2	38.9	41.1	305.1	56.0	65.6
LnGrp LOS	F	D	C	F	A	E	F	D	D	F	E	E
Approach Vol, veh/h		541			1010			1027			1722	
Approach Delay, s/veh		54.7			169.1			237.3			97.4	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.7	25.0	34.7	11.0	37.1	10.7	49.0
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	16.4	22.6	20.6	8.6	31.8	8.2	42.9
Green Ext Time (p_c), s	0.0	4.7	0.0	1.1	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	142.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	548	1810	180	130	1040	130	170	568	170	220	1153	953
Future Volume (veh/h)	548	1810	180	130	1040	130	170	568	170	220	1153	953
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	630	2080	207	149	1195	149	195	653	195	253	1325	1095
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	806	100	155	1624	475	276	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.42	0.42	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3142	390	1767	3864	1131	1767	5066	1537
Grp Volume(v), veh/h	630	1114	1173	149	668	676	195	569	279	253	1325	1095
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1770	1767	1689	1619	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	16.5	16.9	19.7	25.4	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	16.5	16.9	19.7	25.4	68.4
Prop In Lane	1.00		0.18	1.00		0.22	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	454	155	1419	680	276	2475	1140
V/C Ratio(X)	1.44	1.55	1.61	0.94	1.48	1.49	1.26	0.40	0.41	0.92	0.54	0.96
Avail Cap(c_a), veh/h	437	718	728	159	452	454	155	1419	680	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	28.3	28.4	58.2	24.8	16.9
Incr Delay (d2), s/veh	211.8	255.5	280.8	52.3	227.0	231.3	156.9	0.8	1.8	25.5	0.8	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	41.0	75.3	81.6	7.6	44.3	45.1	12.3	6.9	7.0	10.8	10.4	34.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	264.5	297.0	322.3	115.6	279.1	283.4	220.8	29.2	30.3	83.6	25.6	35.7
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	D
Approach Vol, veh/h		2917			1493			1043			2673	
Approach Delay, s/veh		300.1			264.7			65.3			35.3	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	65.0	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	21.7	18.9	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	176.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

35: Harbor Dr & Laurel St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1919	3050	2080	229	142	60
Future Volume (veh/h)	1919	3050	2080	229	142	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2063	3280	2237	0	153	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4096	2154		184	163
Arrive On Green	0.35	0.81	0.43	0.00	0.10	0.10
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2063	3280	2237	0	153	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	42.2	51.0	0.0	10.2	4.6
Cycle Q Clear(g_c), s	41.6	42.2	51.0	0.0	10.2	4.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4096	2154		184	163
V/C Ratio(X)	1.74	0.80	1.04		0.83	0.40
Avail Cap(c_a), veh/h	1188	4096	2154		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	6.2	34.5	0.0	52.7	50.3
Incr Delay (d2), s/veh	334.7	1.7	30.2	0.0	3.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	72.4	11.5	26.4	0.0	4.7	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	373.9	8.0	64.7	0.0	56.5	50.8
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5343	2237	A	218	
Approach Delay, s/veh		149.2	64.7		54.8	
Approach LOS		F	E		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.3		17.7	46.0	56.3
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		44.2		12.2	43.6	53.0
Green Ext Time (p_c), s		35.2		0.3	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			122.4
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	219	290	366	122	348	220	1210	326	365	1260	230
Future Volume (veh/h)	190	219	290	366	122	348	220	1210	326	365	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	228	302	381	127	362	229	1260	340	380	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	256	423	344	177	470	384	267	994	262	247	1498	776
Arrive On Green	0.07	0.23	0.23	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.42	0.42
Sat Flow, veh/h	3428	1856	1509	1767	1856	1518	3428	2740	723	1767	3526	1549
Grp Volume(v), veh/h	198	228	302	381	127	362	229	800	800	380	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1509	1767	1856	1518	1714	1763	1701	1767	1763	1549
Q Serve(g_s), s	6.6	12.5	22.4	11.6	6.4	27.1	7.6	42.0	42.0	16.2	39.5	10.6
Cycle Q Clear(g_c), s	6.6	12.5	22.4	11.6	6.4	27.1	7.6	42.0	42.0	16.2	39.5	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	256	423	344	177	470	384	267	639	617	247	1498	776
V/C Ratio(X)	0.77	0.54	0.88	2.15	0.27	0.94	0.86	1.25	1.30	1.54	0.88	0.31
Avail Cap(c_a), veh/h	338	497	404	177	494	404	267	639	617	247	1501	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	39.4	43.2	52.1	34.6	42.4	52.8	36.9	36.9	49.8	30.5	17.1
Incr Delay (d2), s/veh	5.4	1.1	17.3	536.7	0.1	29.0	22.5	125.7	145.1	260.9	6.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.8	9.7	31.4	2.8	12.8	4.1	39.5	41.5	24.9	17.1	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	40.4	60.5	588.8	34.8	71.4	75.3	162.6	182.0	310.6	36.8	17.5
LnGrp LOS	E	D	E	F	C	E	E	F	F	F	D	B
Approach Vol, veh/h		728			870			1829			1932	
Approach Delay, s/veh		53.5			292.6			160.2			88.3	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.9	13.4	54.5	13.1	34.8
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	18.2	44.0	13.6	24.4	9.6	41.5	8.6	29.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	6.3	0.1	0.2

Intersection Summary			
HCM 6th Ctrl Delay			141.3
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑					↰		↱
Traffic Volume (veh/h)	0	1378	320	290	599	0	0	0	0	190	0	1206
Future Volume (veh/h)	0	1378	320	290	599	0	0	0	0	190	0	1206
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1451	337	305	631	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1622	723	902	2725	0				231	0	
Arrive On Green	0.00	0.46	0.46	0.53	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1451	337	305	631	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	37.8	14.7	5.1	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	37.8	14.7	5.1	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1622	723	902	2725	0				231	0	
V/C Ratio(X)	0.00	0.89	0.47	0.34	0.23	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	902	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.27	0.27	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.8	18.6	18.7	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.6	5.0	1.8	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.6	18.7	18.7	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1788			936						200	A
Approach Delay, s/veh		24.3			6.1						50.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	31.3	51.0		17.7		82.3		
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0		
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0		
Max Q Clear Time (g_c+I1), s	17.1	39.8		13.1		2.0		
Green Ext Time (p_c), s	0.6	6.2		0.1		3.0		

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↱			↰↑	↱			
Traffic Volume (veh/h)	986	582	0	0	569	380	320	10	640	0	0	0
Future Volume (veh/h)	986	582	0	0	569	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	996	588	0	0	575	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1115	2310	0	0	556	371	488	15	447			
Arrive On Green	0.54	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2079	1326	1717	53	1572			
Grp Volume(v), veh/h	996	588	0	0	510	449	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1549	1770	0	1572			
Q Serve(g_s), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.86	0.97		1.00			
Lane Grp Cap(c), veh/h	1115	2310	0	0	494	434	503	0	447			
V/C Ratio(X)	0.89	0.25	0.00	0.00	1.03	1.03	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1115	2310	0	0	494	434	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.50	0.50	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.3	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	5.1	0.1	0.0	0.0	49.6	52.3	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.0	0.0	18.4	16.5	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.1	0.0	0.0	85.6	88.3	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1584			959			979				
Approach Delay, s/veh		16.6			86.8			176.0				
Approach LOS		B			F			F				

Timer - Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		71.0		33.0	38.0	33.0		
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5		
Max Green Setting (Gmax), s		61.5		28.4	29.3	* 28		
Max Q Clear Time (g_c+I1), s		2.0		30.4	27.8	30.0		
Green Ext Time (p_c), s		2.8		0.0	0.7	0.0		

Intersection Summary	
HCM 6th Ctrl Delay	80.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1108	10	382	863	0	1279
Future Volume (veh/h)	1108	10	382	863	0	1279
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1176	0	402	0	0	1346
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1261	575	1531		0	1531
Arrive On Green	0.36	0.00	0.43	0.00	0.00	0.43
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1176	0	402	0	0	1346
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	21.8	0.0	5.0	0.0	0.0	23.8
Cycle Q Clear(g_c), s	21.8	0.0	5.0	0.0	0.0	23.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1261	575	1531		0	1531
V/C Ratio(X)	0.93	0.00	0.26		0.00	0.88
Avail Cap(c_a), veh/h	1273	580	1531		0	1531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	12.3	0.0	0.0	17.6
Incr Delay (d2), s/veh	12.4	0.0	0.4	0.0	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	1.9	0.0	0.0	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.5	0.0	12.7	0.0	0.0	25.1
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1176		402	A		1346
Approach Delay, s/veh	33.5		12.7			25.1
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.0	35.0	33.0
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	7.0	25.8	23.8
Green Ext Time (p_c), s	3.5	3.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX M

YEAR 2050 WITH ALTERNATIVE 2 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7137	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1309
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7058	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1294
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8500	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1558
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9959	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1826
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8389	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1857
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8842	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1958
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9282	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2055
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9551	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2115
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8726	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1932
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9607	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2127
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10098	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2236
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10008	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2216
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9626	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2131
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.01
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10567	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2340
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11118	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2462
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.17
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11028	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2442
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.16
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8046	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2227
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8887	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2460
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.11
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9318	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2579
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.16
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9238	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2556
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.15
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10886	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2410
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11907	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2636
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12548	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.26
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12458	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2758
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.25
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8934	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1978
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9799	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2170
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10319	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2285
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10235	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2266
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3887	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1062
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3097	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	846
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4954	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1354
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4765	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1302
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

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HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4377	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1196
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5848	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1598
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2165
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.4
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4739	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1727
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7097	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1552
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9588	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2097
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9790	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2141
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7679	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1679
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6835	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9147	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2500
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9305	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2035
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7404	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1619
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7275	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1986
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9757	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2664
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.20
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9935	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2170
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2: Without Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7884	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1722
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.1
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX N

YEAR 2050 WITH ALTERNATIVE 3 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	773
Future Volume (vph)	190	210	90	140	140	773
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	840

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	840
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	840
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.75
Capacity (veh/h)	610	667	741	577	1121
Control Delay (s)	10.4	9.6	9.9	10.5	15.0
Approach Delay (s)	10.0		9.9	14.3	
Approach LOS	A		A	B	

Intersection Summary			
Delay	12.5		
Level of Service	B		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	339	120	803	60	280	190
Future Volume (veh/h)	339	120	803	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	361	128	854	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	417	1190	1171		485	594
Arrive On Green	0.24	0.64	0.33	0.00	0.14	0.14
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	361	128	854	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	11.3	1.5	12.3	0.0	4.7	5.3
Cycle Q Clear(g_c), s	11.3	1.5	12.3	0.0	4.7	5.3
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	417	1190	1171		485	594
V/C Ratio(X)	0.87	0.11	0.73		0.61	0.34
Avail Cap(c_a), veh/h	608	1774	1900		1341	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	4.0	16.9	0.0	23.2	12.8
Incr Delay (d2), s/veh	6.3	0.0	0.3	0.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.4	4.4	0.0	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.4	4.0	17.3	0.0	23.7	12.9
LnGrp LOS	C	A	B		C	B
Approach Vol, veh/h		489	854	A	500	
Approach Delay, s/veh		21.3	17.3		19.3	
Approach LOS		C	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		42.9		14.6	17.8	25.1
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.5		7.3	13.3	14.3
Green Ext Time (p_c), s		0.5		0.9	0.3	3.9

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	281	0	0	10	409	349	5	10	793	220
Future Volume (veh/h)	140	5	281	0	0	10	409	349	5	10	793	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	296				431	367	5	11	835	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	896	0	589				444	1732	24	20	988	274
Arrive On Green	0.25	0.00	0.25				0.13	0.49	0.49	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1519				3428	3559	48	1767	2684	745
Grp Volume(v), veh/h	151	0	296				431	182	190	11	548	519
Grp Sat Flow(s),veh/h/ln	1767	0	1519				1714	1763	1844	1767	1763	1666
Q Serve(g_s), s	2.0	0.0	8.8				7.3	3.5	3.5	0.4	16.7	16.8
Cycle Q Clear(g_c), s	2.0	0.0	8.8				7.3	3.5	3.5	0.4	16.7	16.8
Prop In Lane	1.00		1.00				1.00		0.03	1.00		0.45
Lane Grp Cap(c), veh/h	896	0	589				444	858	897	20	649	614
V/C Ratio(X)	0.17	0.00	0.50				0.97	0.21	0.21	0.56	0.84	0.85
Avail Cap(c_a), veh/h	1807	0	980				444	858	897	154	685	647
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	13.9				25.4	8.6	8.6	28.9	17.0	17.0
Incr Delay (d2), s/veh	0.1	0.0	1.1				34.9	0.1	0.1	8.8	9.5	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	8.0				4.9	1.1	1.2	0.2	7.6	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	15.0				60.4	8.8	8.8	37.6	26.5	27.1
LnGrp LOS	B	A	B				E	A	A	D	C	C
Approach Vol, veh/h		447						803			1078	
Approach Delay, s/veh		15.7						36.5			26.9	
Approach LOS		B						D			C	

Timer - Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.1	33.5		20.2	12.0	26.5		
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8		
Max Q Clear Time (g_c+I1), s	2.4	5.5		10.8	9.3	18.8		
Green Ext Time (p_c), s	0.0	2.3		2.8	0.0	2.8		

Intersection Summary		
HCM 6th Ctrl Delay		28.0
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	90	10	210	50	548	47	130	764	40
Future Volume (veh/h)	10	10	10	90	10	210	50	548	47	130	764	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	94	10	219	52	571	49	135	796	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	213	206	163	193	48	318	72	1491	126	173	1264	67
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.31	0.31	0.10	0.37	0.37
Sat Flow, veh/h	386	662	524	330	154	1020	1767	4735	401	1767	3396	179
Grp Volume(v), veh/h	30	0	0	323	0	0	52	405	215	135	413	425
Grp Sat Flow(s),veh/h/ln	1571	0	0	1504	0	0	1767	1689	1759	1767	1763	1813
Q Serve(g_s), s	0.0	0.0	0.0	5.8	0.0	0.0	1.5	4.8	4.9	3.8	9.9	9.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	9.5	0.0	0.0	1.5	4.8	4.9	3.8	9.9	9.9
Prop In Lane	0.33		0.33	0.29		0.68	1.00		0.23	1.00		0.10
Lane Grp Cap(c), veh/h	582	0	0	559	0	0	72	1063	554	173	656	675
V/C Ratio(X)	0.05	0.00	0.00	0.58	0.00	0.00	0.72	0.38	0.39	0.78	0.63	0.63
Avail Cap(c_a), veh/h	976	0	0	960	0	0	192	1645	857	364	1030	1059
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	15.4	0.0	0.0	24.4	13.7	13.8	22.7	13.3	13.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	5.0	0.3	0.6	2.8	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.9	0.0	0.0	0.7	1.6	1.8	1.6	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	0.0	0.0	15.8	0.0	0.0	29.4	14.1	14.4	25.5	14.6	14.6
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			323			672			973	
Approach Delay, s/veh		12.4			15.8			15.3			16.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	21.1		20.9	6.5	24.1		20.9
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	5.8	6.9		2.6	3.5	11.9		11.5
Green Ext Time (p_c), s	0.1	5.0		0.1	0.0	6.7		1.3

Intersection Summary		
HCM 6th Ctrl Delay		15.7
HCM 6th LOS		B

5: Congress St & Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	505	230	180	694	0	180	0	150	0	0	0
Future Volume (veh/h)	0	505	230	180	694	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	521	237	186	715	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	924	401	225	1593	0	420	0	312	0	378	0
Arrive On Green	0.00	0.35	0.35	0.13	0.57	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2799	1157	1767	2849	0	1257	0	1531	0	1856	0
Grp Volume(v), veh/h	0	519	239	186	715	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1165	1767	1388	0	1257	0	1531	0	1856	0
Q Serve(g_s), s	0.0	7.0	7.4	4.5	6.5	0.0	6.1	0.0	3.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.0	7.4	4.5	6.5	0.0	6.1	0.0	3.9	0.0	0.0	0.0
Prop In Lane	0.00		0.99	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	921	403	225	1593	0	420	0	312	0	378	0
V/C Ratio(X)	0.00	0.56	0.59	0.83	0.45	0.00	0.44	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1517	664	225	2214	0	1023	0	1047	0	1307	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.7	11.8	18.7	5.4	0.0	16.4	0.0	15.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	1.3	20.6	0.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.7	2.9	1.1	0.0	1.5	0.0	1.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.2	13.1	39.4	5.5	0.0	16.7	0.0	16.0	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		758			901			341			0	
Approach Delay, s/veh		12.5			12.5			16.3			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	20.1		13.9		30.1		13.9
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	6.5	9.4		0.0		8.5		8.1
Green Ext Time (p_c), s	0.0	4.5		0.0		3.5		1.0

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

6: Pacific Hwy & Rosecrans St/Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	310	230	424	270	180	280	589	375	80	435	200
Future Volume (veh/h)	176	310	230	424	270	180	280	589	375	80	435	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.92	1.00		0.96	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	189	333	247	456	290	194	301	633	403	86	468	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	140	833	499	308	490	384	132	1113	515	102	1108	444
Arrive On Green	0.08	0.30	0.30	0.11	0.34	0.34	0.07	0.32	0.32	0.07	0.31	0.31
Sat Flow, veh/h	1767	2776	1271	2699	1461	1144	1767	3526	1183	1391	3526	1411
Grp Volume(v), veh/h	189	333	247	456	290	194	301	633	403	86	468	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1271	1350	1461	1144	1767	1763	1183	1391	1763	1411
Q Serve(g_s), s	9.4	11.4	17.9	13.6	19.6	16.2	8.9	17.8	35.1	7.3	12.5	14.7
Cycle Q Clear(g_c), s	9.4	11.4	17.9	13.6	19.6	16.2	8.9	17.8	35.1	7.3	12.5	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	833	499	308	490	384	132	1113	515	102	1108	444
V/C Ratio(X)	1.35	0.40	0.49	1.48	0.59	0.51	2.28	0.57	0.78	0.84	0.42	0.48
Avail Cap(c_a), veh/h	140	842	503	308	495	387	132	1123	518	105	1126	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	33.1	28.9	52.7	32.8	31.7	55.1	34.0	29.3	54.5	32.3	33.0
Incr Delay (d2), s/veh	198.9	0.4	0.9	232.0	1.4	0.6	598.4	0.7	7.6	40.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	3.9	5.6	14.5	7.1	4.5	25.9	7.7	10.8	3.7	5.4	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	253.7	33.5	29.8	284.7	34.2	32.2	653.4	34.6	36.9	94.6	32.4	33.3
LnGrp LOS	F	C	C	F	C	C	F	C	D	F	C	C
Approach Vol, veh/h		769			940			1337			769	
Approach Delay, s/veh		86.4			155.3			174.6			39.6	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.6	14.3	44.1	14.8	45.8	14.1	44.3
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	19.9	10.9	16.7	11.4	21.6	9.3	37.1
Green Ext Time (p_c), s	0.0	3.6	0.0	2.5	0.0	1.6	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	124.9
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	2.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	666	610	140
Future Vol, veh/h	50	30	70	666	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	680	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1280	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	169	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	345	706	-	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	46.5		1		0	
HCM LOS	E					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	165	-	-
HCM Lane V/C Ratio	0.101	-	0.495	-	-
HCM Control Delay (s)	10.7	-	46.5	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	380	360	2119	0	0	2643	630
Future Volume (veh/h)	0	0	0	90	650	380	360	2119	0	0	2643	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	392	371	2185	0	0	2725	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				89	655	412	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				264	1935	1219	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				648	0	507	371	2185	0	0	2725	649
Grp Sat Flow(s),veh/h/ln				1842	0	1576	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	40.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	533	341	3632	0	0	2463	736
V/C Ratio(X)				1.04	0.00	0.95	1.09	0.60	0.00	0.00	1.11	0.88
Avail Cap(c_a), veh/h				624	0	533	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.13	0.13	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.9	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				46.6	0.0	26.7	46.5	0.1	0.0	0.0	54.6	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				27.9	0.0	19.7	13.3	0.0	0.0	0.0	37.1	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				89.6	0.0	68.7	86.4	0.1	0.0	0.0	88.0	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1155			2556			3374	
Approach Delay, s/veh					80.4			12.6			79.6	
Approach LOS					F			B			E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2
Green Ext Time (p_c), s		9.5		0.0	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			55.6
HCM 6th LOS			E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1859	30	300	2553	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1859	30	300	2553	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	1957	32	316	2687	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2368	39	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5298	84	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1287	702	316	2687	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1838	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	16.0	16.1	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	16.0	16.1	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	848	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.83	0.83	1.08	0.64	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	848	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.39	0.39	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.3	3.3	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	2.1	3.8	40.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	2.0	2.6	11.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	5.4	7.1	84.2	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						1989			3003	
Approach Delay, s/veh		52.4						6.0			8.9	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	26.0	64.9	39.1	90.9
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	23.6	18.1	30.9	2.0
Green Ext Time (p_c), s	0.0	6.3	1.1	15.4

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	300	20	342	0	370	0	506	294	90	320	0
Future Volume (veh/h)	300	300	20	342	0	370	0	506	294	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.85	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	323	22	368	0	398	0	544	316	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	490	475	32	0	0	0	0	804	466	346	1905	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.40	0.40	0.06	0.54	0.00
Sat Flow, veh/h	1767	1712	117		0		0	2096	1160	1767	3618	0
Grp Volume(v), veh/h	323	0	345		0.0		0	479	381	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1829				0	1763	1400	1767	1763	0
Q Serve(g_s), s	8.7	0.0	9.0				0.0	12.0	12.0	1.6	2.7	0.0
Cycle Q Clear(g_c), s	8.7	0.0	9.0				0.0	12.0	12.0	1.6	2.7	0.0
Prop In Lane	1.00		0.06				0.00		0.83	1.00		0.00
Lane Grp Cap(c), veh/h	490	0	507				0	708	562	346	1905	0
V/C Ratio(X)	0.66	0.00	0.68				0.00	0.68	0.68	0.28	0.18	0.00
Avail Cap(c_a), veh/h	759	0	786				0	790	628	429	2236	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.2	0.0	17.3				0.0	13.2	13.2	9.4	6.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.6				0.0	5.1	6.5	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	3.6				0.0	5.0	4.2	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	18.9				0.0	18.3	19.7	9.6	6.5	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		668						860			441	
Approach Delay, s/veh		18.8						18.9			7.2	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	7.5	26.5	19.8	34.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	3.6	14.0	11.0	4.7
Green Ext Time (p_c), s	0.0	7.5	2.6	6.4

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Year 2050A + P3 AM | Old Town Complex

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	331	161	282	360	20	173	1689	402	0	2143	490
Future Volume (veh/h)	220	331	161	282	360	20	173	1689	402	0	2143	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	193	402	169	232	470	21	182	1778	423	0	2256	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	401	842	322	245	487	22	140	2037	474	0	2108	
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.08	1.00	1.00	0.00	0.55	0.00
Sat Flow, veh/h	1767	3711	1420	1767	3519	157	3428	4086	950	0	5233	1572
Grp Volume(v), veh/h	193	402	169	232	247	244	182	1462	739	0	2256	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1420	1767	1856	1820	1714	1689	1659	0	1689	1572
Q Serve(g_s), s	12.3	12.2	13.6	16.9	17.2	17.3	5.3	1.2	1.6	0.0	54.1	0.0
Cycle Q Clear(g_c), s	12.3	12.2	13.6	16.9	17.2	17.3	5.3	1.2	1.6	0.0	54.1	0.0
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.57	0.00		1.00
Lane Grp Cap(c), veh/h	401	842	322	245	257	252	140	1684	827	0	2108	
V/C Ratio(X)	0.48	0.48	0.52	0.95	0.96	0.97	1.30	0.87	0.89	0.00	1.07	
Avail Cap(c_a), veh/h	489	1028	393	245	257	252	140	1684	827	0	2108	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	0.43	0.43	0.43	0.00	0.73	0.00
Uniform Delay (d), s/veh	43.6	43.6	44.1	55.5	55.7	55.7	59.7	0.1	0.1	0.0	29.0	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.5	35.9	38.4	39.9	156.7	2.9	6.8	0.0	39.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	5.7	4.8	10.0	10.8	10.7	5.2	0.7	1.6	0.0	26.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	43.7	44.6	91.5	94.0	95.6	216.4	3.0	6.9	0.0	68.2	0.0
LnGrp LOS	D	D	D	F	F	F	F	A	A	A	F	
Approach Vol, veh/h		764			723			2383			2256	A
Approach Delay, s/veh		44.0			93.7			20.5			68.2	
Approach LOS		D			F			C			E	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		70.7		35.4	10.7	60.0		23.9
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		3.6		15.6	7.3	56.1		19.3
Green Ext Time (p_c), s		8.4		1.1	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		49.6
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050A + P3 AM | Old Town Complex

12: Rosecrans St & Midway Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	310	160	166	426	342	200	1612	140	384	1736	186
Future Volume (veh/h)	310	310	160	166	426	342	200	1612	140	384	1736	186
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	323	323	167	173	444	356	208	1679	146	400	1808	194
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	895	386	171	854	364	258	1792	156	403	1969	210
Arrive On Green	0.10	0.25	0.25	0.10	0.24	0.24	0.08	0.38	0.38	0.24	0.85	0.85
Sat Flow, veh/h	3428	3526	1522	1767	3526	1502	3428	4735	411	3428	4635	495
Grp Volume(v), veh/h	323	323	167	173	444	356	208	1196	629	400	1315	687
Grp Sat Flow(s),veh/h/ln	1714	1763	1522	1767	1763	1502	1714	1689	1769	1714	1689	1752
Q Serve(g_s), s	12.1	9.8	12.0	12.6	14.2	30.6	7.8	44.3	44.5	15.1	34.4	35.6
Cycle Q Clear(g_c), s	12.1	9.8	12.0	12.6	14.2	30.6	7.8	44.3	44.5	15.1	34.4	35.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.28
Lane Grp Cap(c), veh/h	359	895	386	171	854	364	258	1278	670	403	1435	744
V/C Ratio(X)	0.90	0.36	0.43	1.01	0.52	0.98	0.81	0.94	0.94	0.99	0.92	0.92
Avail Cap(c_a), veh/h	359	895	386	171	854	364	282	1343	703	403	1435	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	0.09	0.09	0.09
Uniform Delay (d), s/veh	57.5	39.8	40.6	58.7	42.7	48.9	59.2	38.9	38.9	49.6	8.2	8.3
Incr Delay (d2), s/veh	24.1	0.1	0.3	71.4	0.3	41.1	7.6	8.7	14.8	11.6	1.2	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.3	4.5	9.0	6.2	15.6	3.6	19.4	21.6	6.2	3.6	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.7	39.9	40.9	130.1	43.0	90.0	66.8	47.6	53.7	61.2	9.4	10.8
LnGrp LOS	F	D	D	F	D	F	E	D	D	E	A	B
Approach Vol, veh/h		813			973			2033			2402	
Approach Delay, s/veh		56.7			75.7			51.4			18.4	
Approach LOS		E			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	54.1	17.0	37.9	14.2	60.9	18.5	36.4
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	17.1	46.5	14.6	14.0	9.8	37.6	14.1	32.6
Green Ext Time (p_c), s	0.0	2.7	0.0	0.9	0.0	5.7	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			43.2
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

13: Rosecrans St & Lytton St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	422	350	10	699	376	120	10	1181	571	120	1653	279
Future Volume (veh/h)	422	350	10	699	376	120	10	1181	571	120	1653	279
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	431	357	10	713	384	122	10	1205	583	122	1687	285
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	408	11	612	423	346	21	2005	607	169	1528	655
Arrive On Green	0.17	0.23	0.23	0.18	0.23	0.23	0.01	0.40	0.40	0.10	0.87	0.87
Sat Flow, veh/h	1767	1794	50	3428	1856	1518	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	431	0	367	713	384	122	10	1205	583	122	1687	285
Grp Sat Flow(s),veh/h/ln	1767	0	1844	1714	1856	1518	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	22.6	0.0	25.0	23.2	26.2	7.4	0.7	24.5	48.2	4.5	56.4	2.9
Cycle Q Clear(g_c), s	22.6	0.0	25.0	23.2	26.2	7.4	0.7	24.5	48.2	4.5	56.4	2.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	419	612	423	346	21	2005	607	169	1528	655
V/C Ratio(X)	1.40	0.00	0.88	1.17	0.91	0.35	0.49	0.60	0.96	0.72	1.10	0.44
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	2005	607	232	1528	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	0.47	0.47	0.47
Uniform Delay (d), s/veh	53.7	0.0	48.5	53.4	48.9	30.0	63.9	31.1	38.3	57.7	8.6	1.6
Incr Delay (d2), s/veh	199.8	0.0	14.2	89.1	15.9	0.2	6.4	1.3	28.1	1.6	52.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.1	0.0	13.1	17.5	14.0	2.8	0.4	10.1	22.5	1.9	14.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	253.5	0.0	62.6	142.5	64.7	30.2	70.3	32.5	66.4	59.3	60.7	2.6
LnGrp LOS	F	A	E	F	E	C	E	C	E	E	F	A
Approach Vol, veh/h		798			1219			1798			2094	
Approach Delay, s/veh		165.7			106.8			43.7			52.7	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	57.1	27.6	34.4	5.9	62.1	27.5	34.5
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	50.2	25.2	27.0	2.7	58.4	24.6	28.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	76.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

14: Truxtun Rd & Lytton St/Barnett Ave

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	832	210	650	1035	90	180
Future Volume (veh/h)	832	210	650	1035	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	876	221	684	1089	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	858	216	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2850	695	1767	3618	538	1071
Grp Volume(v), veh/h	560	537	684	1089	285	0
Grp Sat Flow(s),veh/h/ln	1763	1690	1767	1763	1615	0
Q Serve(g_s), s	28.0	28.0	28.5	13.2	15.2	0.0
Cycle Q Clear(g_c), s	28.0	28.0	28.5	13.2	15.2	0.0
Prop In Lane		0.41	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	526	560	2370	344	0
V/C Ratio(X)	1.02	1.02	1.22	0.46	0.83	0.00
Avail Cap(c_a), veh/h	549	526	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	31.0	30.7	7.0	33.8	0.0
Incr Delay (d2), s/veh	36.4	37.5	115.4	0.6	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	16.4	29.5	4.4	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.4	68.5	146.1	7.6	41.4	0.0
LnGrp LOS	F	F	F	A	D	A
Approach Vol, veh/h	1097			1773	285	
Approach Delay, s/veh	67.9			61.1	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	32.5	33.4	65.9	24.1
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	28.5	* 23	54.7	25.0
Max Q Clear Time (g_c+I1), s	30.5	30.0	15.2	17.2
Green Ext Time (p_c), s	0.0	0.0	10.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	61.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	336	926	30	0	1032
Future Vol, veh/h	0	336	926	30	0	1032
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	386	1064	34	0	1186

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	569	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	463	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	454	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	454	-
HCM Lane V/C Ratio	-	-	0.851	-
HCM Control Delay (s)	-	-	43.9	-
HCM Lane LOS	-	-	E	-
HCM 95th %tile Q(veh)	-	-	8.5	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1022	1586	956	903	129
Future Volume (veh/h)	0	1022	1586	956	903	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1043	1618	976	921	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1680	1680	1231	1114	
Arrive On Green	0.00	0.48	0.48	0.48	0.32	0.00
Sat Flow, veh/h	0	3711	3618	1513	3428	1572
Grp Volume(v), veh/h	0	1043	1618	976	921	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1513	1714	1572
Q Serve(g_s), s	0.0	11.7	23.7	19.3	13.2	0.0
Cycle Q Clear(g_c), s	0.0	11.7	23.7	19.3	13.2	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1680	1680	1231	1114	
V/C Ratio(X)	0.00	0.62	0.96	0.79	0.83	
Avail Cap(c_a), veh/h	0	1680	1680	1231	1543	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.4	13.5	3.0	16.6	0.0
Incr Delay (d2), s/veh	0.0	0.7	14.2	3.6	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	10.6	12.9	4.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	11.1	27.8	6.6	19.0	0.0
LnGrp LOS	A	B	C	A	B	
Approach Vol, veh/h		1043	2594		921	A
Approach Delay, s/veh		11.1	19.8		19.0	
Approach LOS		B	B		B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	30.8	22.5	30.8
Change Period (Y+Rc), s	5.4	5.2	5.4
Max Green Setting (Gmax), s	25.4	24.0	25.4
Max Q Clear Time (g_c+I1), s	13.7	15.2	25.7
Green Ext Time (p_c), s	5.5	2.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	40	5	40	140	1004	50	130	829	170
Future Volume (veh/h)	30	0	50	40	5	40	140	1004	50	130	829	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	47	6	47	165	1181	59	153	975	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	170	31	151	396	28	220	209	1954	98	195	1624	332
Arrive On Green	0.16	0.00	0.16	0.16	0.16	0.16	0.12	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	361	194	935	1314	174	1363	1767	4930	246	1767	4180	855
Grp Volume(v), veh/h	94	0	0	47	0	53	165	809	431	153	787	388
Grp Sat Flow(s),veh/h/ln	1490	0	0	1314	0	1537	1767	1689	1799	1767	1689	1657
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.3	4.0	8.4	8.4	3.7	8.2	8.3
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.0	0.0	1.3	4.0	8.4	8.4	3.7	8.2	8.3
Prop In Lane	0.37		0.63	1.00		0.89	1.00		0.14	1.00		0.52
Lane Grp Cap(c), veh/h	352	0	0	396	0	248	209	1339	713	195	1312	644
V/C Ratio(X)	0.27	0.00	0.00	0.12	0.00	0.21	0.79	0.60	0.60	0.78	0.60	0.60
Avail Cap(c_a), veh/h	1155	0	0	1135	0	1111	267	1587	845	303	1648	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	0.0	0.0	16.0	0.0	16.1	19.0	10.6	10.6	19.2	10.8	10.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.2	8.7	0.6	1.2	2.9	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.4	0.0	0.4	2.0	2.5	2.8	1.5	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	0.0	0.0	16.1	0.0	16.3	27.7	11.2	11.8	22.0	11.3	11.9
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		94			100			1405			1328	
Approach Delay, s/veh		16.7			16.2			13.3			12.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	22.9		12.0	9.6	22.6		12.0
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.7	10.4		4.3	6.0	10.3		3.3
Green Ext Time (p_c), s	0.0	6.8		0.3	0.0	6.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	119.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	424	712	1174	839	20
Future Vol, veh/h	0	424	712	1174	839	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	471	791	1304	932	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	497	964	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 442	~ 404	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 434	~ 400	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	99	178	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 400	-	434	-	-
HCM Lane V/C Ratio	1.978	-	1.086	-	-
HCM Control Delay (s)	$ 471.5	-	99	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	54.3	-	15.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	156	0	1885	1460	187
Future Vol, veh/h	0	156	0	1885	1460	187
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	179	0	2167	1678	215

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	967	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	252	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	247	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	247	-	-
HCM Lane V/C Ratio	-	0.726	-	-
HCM Control Delay (s)	-	50.5	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	20	30	20	30	10	420	1828	260	137	1258	223
Future Volume (veh/h)	30	20	30	20	30	10	420	1828	260	137	1258	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.69	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	33	22	33	22	33	11	467	2031	289	152	1398	248
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	42	635	538	31	624	367	277	1279	530	142	876	152
Arrive On Green	0.02	0.34	0.34	0.02	0.34	0.34	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1092	1767	3526	1462	1767	2976	518
Grp Volume(v), veh/h	33	22	33	22	33	11	467	2031	289	152	817	829
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1092	1767	1763	1462	1767	1763	1731
Q Serve(g_s), s	2.2	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.6	9.5	34.9	34.9
Cycle Q Clear(g_c), s	2.2	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.6	9.5	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	42	635	538	31	624	367	277	1279	530	142	519	510
V/C Ratio(X)	0.79	0.03	0.06	0.72	0.05	0.03	1.68	1.59	0.54	1.07	1.57	1.63
Avail Cap(c_a), veh/h	76	635	538	86	626	368	277	1279	530	142	519	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	25.9	26.2	58.0	26.6	26.4	50.0	37.8	30.0	54.5	41.8	41.8
Incr Delay (d2), s/veh	11.9	0.0	0.0	10.9	0.0	0.0	323.1	268.4	1.4	96.6	267.7	290.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.6	0.7	0.6	0.2	33.1	65.8	6.7	8.0	53.6	55.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.5	26.0	26.2	68.9	26.6	26.4	373.1	306.2	31.4	151.1	309.5	332.8
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	F	F
Approach Vol, veh/h		88			66			2787			1798	
Approach Delay, s/veh		42.4			40.7			288.9			306.8	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.7	6.5	45.5	23.0	43.6	7.2	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	11.5	45.0	3.5	3.7	20.6	36.9	4.2	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	287.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1036.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1883	2325	2508	1178	130
Future Vol, veh/h	0	1883	2325	2508	1178	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2047	2527	2726	1280	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	660	1431	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 403	~ 466	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 395	~ 462	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay,	$ 1907.1	$ 978.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 462	-	395	-	-
HCM Lane V/C Ratio	5.47	-	5.182	-	-
HCM Control Delay (s)	$ 2033.8		$ 1907.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	261.8	-	210.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	160	430	300	10	406	110	270	5	50	10
Future Volume (veh/h)	5	80	160	430	300	10	406	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	208	558	390	13	527	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	211	423	386	716	24	417	88	217	85	635	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	527	1053	1046	1781	59	749	203	499	48	1459	276
Grp Volume(v), veh/h	6	0	312	558	0	403	1021	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1580	1046	0	1841	1451	0	0	1784	0	0
Q Serve(g_s), s	0.3	0.0	8.8	15.3	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	8.8	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.03	0.52		0.34	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	634	386	0	739	722	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.49	1.45	0.00	0.55	1.41	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	634	386	0	739	722	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.4	24.7	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	214.7	0.0	0.9	194.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.9	28.3	0.0	3.8	48.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.4	239.4	0.0	14.6	212.9	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		318			961			1021			84	
Approach Delay, s/veh		14.4			145.2			212.9			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	29.0	31.0	29.0	31.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	24.1	26.1	24.1	26.1
Max Q Clear Time (g_c+I1), s	12.3	3.7	26.1	28.1
Green Ext Time (p_c), s	2.3	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	512	496	50	0	320	390
Future Volume (veh/h)	0	0	20	40	390	370	512	496	50	0	320	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	632	612	62	0	395	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	107	0	0	0	331	403
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	0	0	0	748	911
Grp Volume(v), veh/h	0	0	25	987	0	0	1306	0	0	0	0	876
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	0	0	0	0	0	1659
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.48		0.05	0.00		0.55
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	107	0	0	0	0	733
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	12.22	0.00	0.00	0.00	0.00	1.19
Avail Cap(c_a), veh/h	0	0	569	676	0	0	107	0	0	0	0	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	25.0	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	5068.9	0.0	0.0	0.0	0.0	100.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	151.6	0.0	0.0	0.0	0.0	26.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	5093.9	0.0	0.0	0.0	0.0	114.6
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			1306			876	
Approach Delay, s/veh		10.4			232.0			5093.9			114.6	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0	23.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	24.1	2.5	24.1	20.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2186.1
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	894.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	1060	0	523	100	0
Future Vol, veh/h	450	1060	0	523	100	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1262	0	623	119	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	389	75.8	12.2
HCM LOS	F	F	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	523	450	1060	100
LT Vol	0	450	0	0
Through Vol	523	0	0	100
RT Vol	0	0	1060	0
Lane Flow Rate	623	536	1262	119
Geometry Grp	2	7	7	2
Degree of Util (X)	1.053	1.071	2.103	0.233
Departure Headway (Hd)	6.09	7.418	6.194	7.045
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	493	606	512
Service Time	4.038	5.118	3.894	5.065
HCM Lane V/C Ratio	1.031	1.087	2.083	0.232
HCM Control Delay	75.8	88	516.8	12.2
HCM Lane LOS	F	F	F	B
HCM 95th-tile Q	17.4	16.3	85.5	0.9

Intersection	
Intersection Delay, s/veh	195.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	885	30	50	5	468	5	136	5	5	5
Future Vol, veh/h	5	300	885	30	50	5	468	5	136	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	1006	34	57	6	532	6	155	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	249.1	13.2	119.5	11.8
HCM LOS	F	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	77%	2%	0%	35%	33%
Vol Thru, %	1%	98%	0%	59%	33%
Vol Right, %	22%	0%	100%	6%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	609	305	885	85	15
LT Vol	468	5	0	30	5
Through Vol	5	300	0	50	5
RT Vol	136	0	885	5	5
Lane Flow Rate	692	347	1006	97	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.173	0.645	1.673	0.195	0.035
Departure Headway (Hd)	6.651	7.192	6.467	8.192	8.445
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	554	506	573	440	426
Service Time	4.651	4.892	4.167	6.192	6.445
HCM Lane V/C Ratio	1.249	0.686	1.756	0.22	0.04
HCM Control Delay	119.5	22	327.3	13.2	11.8
HCM Lane LOS	F	C	F	B	B
HCM 95th-tile Q	22.4	4.5	53.4	0.7	0.1

Intersection	
Intersection Delay, s/veh	125.2
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	514	230	690
Future Vol, veh/h	95	100	80	514	230	690
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	535	240	719
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13	52	196.3
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	13%	100%	0%	0%
Vol Thru, %	87%	0%	0%	25%
Vol Right, %	0%	0%	100%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	594	95	100	920
LT Vol	80	95	0	0
Through Vol	514	0	0	230
RT Vol	0	0	100	690
Lane Flow Rate	619	99	104	958
Geometry Grp	2	7	7	2
Degree of Util (X)	0.959	0.223	0.2	1.38
Departure Headway (Hd)	6.103	8.756	7.513	5.183
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	600	413	481	709
Service Time	4.103	6.456	5.213	3.194
HCM Lane V/C Ratio	1.032	0.24	0.216	1.351
HCM Control Delay	52	14	12.1	196.3
HCM Lane LOS	F	B	B	F
HCM 95th-tile Q	13.1	0.8	0.7	41.6

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	514	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	10	514	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	11	578	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	25.2	10.4	17.8
HCM LOS	-	D	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	2%	9%
Vol Thru, %	100%	0%	100%	2%	91%
Vol Right, %	0%	100%	0%	96%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	534	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	10	300
RT Vol	0	40	0	514	0
Lane Flow Rate	90	45	0	600	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.169	0.076	0	0.809	0.608
Departure Headway (Hd)	6.773	6.057	6.483	4.851	5.903
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	528	588	0	744	612
Service Time	4.543	3.826	4.579	2.902	3.954
HCM Lane V/C Ratio	0.17	0.077	0	0.806	0.606
HCM Control Delay	10.9	9.3	9.6	25.2	17.8
HCM Lane LOS	B	A	N	D	C
HCM 95th-tile Q	0.6	0.2	0	8.5	4.1

Intersection	
Intersection Delay, s/veh	44.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	176	180	150	0	0	0	90	60	160	320	170	10
Future Vol, veh/h	176	180	150	0	0	0	90	60	160	320	170	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	183	188	156	0	0	0	94	63	167	333	177	10
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	50.5	19.2	54.2
HCM LOS	F	C	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	35%	64%
Vol Thru, %	19%	36%	34%
Vol Right, %	52%	30%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	506	500
LT Vol	90	176	320
Through Vol	60	180	170
RT Vol	160	150	10
Lane Flow Rate	323	527	521
Geometry Grp	1	1	1
Degree of Util (X)	0.597	0.942	0.956
Departure Headway (Hd)	6.661	6.432	6.606
Convergence, Y/N	Yes	Yes	Yes
Cap	539	564	547
Service Time	4.731	4.484	4.666
HCM Lane V/C Ratio	0.599	0.934	0.952
HCM Control Delay	19.2	50.5	54.2
HCM Lane LOS	C	F	F
HCM 95th-tile Q	3.9	12.1	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	892	0	0	932	680
Future Volume (veh/h)	0	0	0	200	370	80	300	892	0	0	932	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	939	0	0	981	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	939	0	0	981	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.1	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.1	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.39	0.00	0.00	0.63	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.73	0.73	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	18.1	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.5	0.4	0.0	0.0	1.9	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	7.3	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.4	0.0	0.0	20.1	74.2
LnGrp LOS				C	C	C	C	A	A	A	C	F
Approach Vol, veh/h					684			1255			1697	
Approach Delay, s/veh					31.5			6.4			42.9	
Approach LOS					C			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0				
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9				
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1				
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9				
Green Ext Time (p_c), s		10.4			0.0	0.0		2.4				

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	592	160	460	672	0
Future Volume (veh/h)	600	380	240	0	0	0	0	592	160	460	672	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	610	165	474	693	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	610	165	474	693	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	13.8	7.8	11.3	10.4	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	13.8	7.8	11.3	10.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.53	0.33	0.85	0.40	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.95	0.95	0.83	0.83	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	19.0	17.2	34.2	8.1	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	1.7	1.7	6.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	4.6	2.3	5.1	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	20.7	18.9	40.4	8.6	0.0
LnGrp LOS	C	C	C				A	C	B	D	A	A
Approach Vol, veh/h		1258						775			1167	
Approach Delay, s/veh		31.3						20.3			21.5	
Approach LOS		C						C			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1						
Max Q Clear Time (g_c+I1), s	13.3	15.8		18.6		12.4						
Green Ext Time (p_c), s	0.4	4.0		2.5		6.2						

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	552	0	0	720	192
Future Volume (veh/h)	30	0	70	60	50	170	140	552	0	0	720	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	575	0	0	750	200
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	288	176	1500	0	0	1033	446
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.37	0.37
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	575	0	0	750	200
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	8.2	0.0	0.0	15.7	8.5
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	8.2	0.0	0.0	15.7	8.5
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	288	176	1500	0	0	1033	446
V/C Ratio(X)	1.11	0.00	0.00	0.18	0.14	0.62	0.83	0.38	0.00	0.00	0.73	0.45
Avail Cap(c_a), veh/h	94	0	0	672	706	566	176	1884	0	0	1400	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	23.0	22.9	25.2	30.2	9.4	0.0	0.0	18.7	16.4
Incr Delay (d2), s/veh	125.2	0.0	0.0	0.1	0.1	0.8	27.5	0.1	0.0	0.0	1.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	0.8	0.7	2.6	3.6	2.2	0.0	0.0	4.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	157.4	0.0	0.0	23.1	22.9	26.0	57.7	9.5	0.0	0.0	20.1	17.3
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			721			950	
Approach Delay, s/veh		157.4			24.9			19.3			19.5	
Approach LOS		F			C			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		40.7		8.0	11.3	29.4		19.6				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		10.2		6.0	7.5	17.7		9.4				
Green Ext Time (p_c), s		2.8		0.0	0.0	6.4		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		27.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	312	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	395	0	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	957	0	742				0	651	86	288	551	0
Arrive On Green	0.27	0.00	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	395	0	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	0	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	3.7	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	3.7	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	957	0	742				0	369	367	288	551	0
V/C Ratio(X)	0.41	0.00	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	2545	0	1427				0	606	602	313	597	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0				0.0	0.7	0.7	6.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	0.0	5.9				0.0	15.4	15.5	22.2	16.5	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		484						478			489	
Approach Delay, s/veh		11.1						15.4			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				7.1		5.7		6.3				
Green Ext Time (p_c), s				1.1		0.9		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			15.1
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	150	250	432	100	96	466	140
Future Volume (veh/h)	90	200	100	410	700	150	250	432	100	96	466	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	172	287	497	115	110	536	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	542	540	187	519	111	129	901	201	131	913	265
Arrive On Green	0.06	0.35	0.35	0.13	0.42	0.42	0.07	0.22	0.22	0.09	0.24	0.24
Sat Flow, veh/h	1767	1537	1531	1464	1222	261	1767	4088	913	1464	3852	1118
Grp Volume(v), veh/h	103	230	115	471	0	977	287	407	205	110	468	229
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1483	1767	1689	1624	1464	1689	1593
Q Serve(g_s), s	5.1	10.3	4.8	11.6	0.0	38.5	6.6	9.7	10.2	6.7	11.1	11.6
Cycle Q Clear(g_c), s	5.1	10.3	4.8	11.6	0.0	38.5	6.6	9.7	10.2	6.7	11.1	11.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.56	1.00		0.70
Lane Grp Cap(c), veh/h	99	542	540	187	0	629	129	744	358	131	800	377
V/C Ratio(X)	1.04	0.42	0.21	2.52	0.00	1.55	2.23	0.55	0.57	0.84	0.58	0.61
Avail Cap(c_a), veh/h	99	542	540	187	0	629	129	1091	525	131	1147	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	22.3	20.5	39.5	0.0	26.1	42.0	31.3	31.5	40.7	30.6	30.8
Incr Delay (d2), s/veh	100.5	0.2	0.1	697.5	0.0	256.3	578.5	1.2	2.7	34.8	1.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.7	1.7	40.4	0.0	57.5	23.5	4.0	4.2	3.6	4.6	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.3	22.5	20.6	737.0	0.0	282.4	620.6	32.5	34.2	75.4	31.9	33.7
LnGrp LOS	F	C	C	F	A	F	F	C	C	E	C	C
Approach Vol, veh/h		448			1448			899			807	
Approach Delay, s/veh		49.8			430.3			220.6			38.3	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	25.3	16.0	36.9	11.0	26.8	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	8.7	12.2	13.6	12.3	8.6	13.6	7.1	40.5
Green Ext Time (p_c), s	0.0	5.9	0.0	1.0	0.0	6.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	242.8
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	1140	100	80	1410	90	250	371	90	100	273	933
Future Volume (veh/h)	551	1140	100	80	1410	90	250	371	90	100	273	933
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	562	1163	102	82	1439	92	255	379	92	102	279	952
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1096	70	134	1004	233	124	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3359	214	1767	4077	947	1767	5066	1520
Grp Volume(v), veh/h	562	626	639	82	752	779	255	311	160	102	279	952
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1810	1767	1689	1647	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.7	11.3	8.0	6.2	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	10.7	11.3	8.0	6.2	33.7
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	591	134	832	406	124	1219	710
V/C Ratio(X)	1.45	0.73	0.73	0.80	1.31	1.32	1.91	0.37	0.39	0.82	0.23	1.34
Avail Cap(c_a), veh/h	386	859	875	121	575	591	134	832	406	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	43.8	44.0	64.2	42.7	38.1
Incr Delay (d2), s/veh	218.7	3.5	3.5	23.2	150.6	154.8	434.2	1.3	2.9	14.5	0.4	163.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.0	17.4	17.8	3.6	44.0	45.8	20.9	4.7	5.0	4.1	2.7	56.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	273.4	32.0	32.0	88.4	197.7	202.0	498.9	45.1	46.9	78.7	43.1	201.2
LnGrp LOS	F	C	C	F	F	F	F	D	D	E	D	F
Approach Vol, veh/h		1827			1613			726			1333	
Approach Delay, s/veh		106.3			194.2			204.9			158.7	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	39.8	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.0	13.3	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.4	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	157.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

35: Harbor Dr & Laurel St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1410	2530	2930	90	76	100
Future Volume (veh/h)	1410	2530	2930	90	76	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1516	2720	3151	0	82	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4177	2756		153	136
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1516	2720	3151	0	82	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	5.2	7.9
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	5.2	7.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4177	2756		153	136
V/C Ratio(X)	1.82	0.65	1.14		0.54	0.79
Avail Cap(c_a), veh/h	834	4177	2756		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.6	52.9
Incr Delay (d2), s/veh	372.9	0.8	69.3	0.0	1.1	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	55.3	5.9	42.0	0.0	2.4	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	417.5	4.7	96.2	0.0	52.7	56.8
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4236	3151	A	190	
Approach Delay, s/veh		152.5	96.2		55.1	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		9.9	30.7	66.2
Green Ext Time (p_c), s		51.0		0.3	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		126.6
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	80	120	176	166	202	260	1180	122	242	790	240
Future Volume (veh/h)	90	80	120	176	166	202	260	1180	122	242	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	83	125	183	173	210	271	1229	127	252	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	320	259	88	328	263	355	1190	123	291	1519	748
Arrive On Green	0.05	0.17	0.17	0.05	0.18	0.18	0.10	0.37	0.37	0.16	0.43	0.43
Sat Flow, veh/h	3428	1856	1503	1767	1856	1487	3428	3218	332	1767	3526	1570
Grp Volume(v), veh/h	94	83	125	183	173	210	271	671	685	252	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1503	1767	1856	1487	1714	1763	1787	1767	1763	1570
Q Serve(g_s), s	2.2	3.1	6.0	4.0	6.8	10.9	6.2	29.8	29.8	11.2	14.0	8.0
Cycle Q Clear(g_c), s	2.2	3.1	6.0	4.0	6.8	10.9	6.2	29.8	29.8	11.2	14.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	156	320	259	88	328	263	355	652	661	291	1519	748
V/C Ratio(X)	0.60	0.26	0.48	2.09	0.53	0.80	0.76	1.03	1.04	0.87	0.54	0.33
Avail Cap(c_a), veh/h	204	714	578	88	686	550	472	652	661	351	1523	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	28.9	30.1	38.3	30.1	31.8	35.2	25.4	25.4	32.8	17.0	13.1
Incr Delay (d2), s/veh	1.4	0.4	1.4	525.3	0.5	2.1	3.4	43.1	44.6	15.4	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.4	2.1	14.4	2.9	3.8	2.6	18.9	19.5	5.8	5.2	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	29.3	31.5	563.6	30.6	33.9	38.6	68.5	69.9	48.2	17.6	13.5
LnGrp LOS	D	C	C	F	C	C	D	F	F	D	B	B
Approach Vol, veh/h		302			566			1627			1325	
Approach Delay, s/veh		33.2			204.1			64.1			22.6	
Approach LOS		C			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	35.1	8.4	19.4	12.7	40.0	8.1	19.7
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	13.2	31.8	6.0	8.0	8.2	16.0	4.2	12.9
Green Ext Time (p_c), s	0.1	0.0	0.0	0.8	0.2	8.9	0.0	0.8

Intersection Summary			
HCM 6th Ctrl Delay			68.0
HCM 6th LOS			E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1372	100	370	420	0	0	0	0	190	0	852
Future Volume (veh/h)	0	1372	100	370	420	0	0	0	0	190	0	852
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1491	109	402	457	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1491	109	402	457	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	30.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	30.4	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.65	0.11	1.19	0.16	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.13	0.13	0.66	0.66	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.4	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	104.7	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.6	1.0	9.3	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.6	7.7	152.9	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1600			859						207	A
Approach Delay, s/veh		12.3			71.6						55.5	
Approach LOS		B			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0
Max Q Clear Time (g_c+I1), s	13.8	32.4		15.8		2.0
Green Ext Time (p_c), s	0.0	5.2		0.1		2.1

Intersection Summary		
HCM 6th Ctrl Delay		34.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	996	566	0	0	490	310	300	10	440	0	0	0
Future Volume (veh/h)	996	566	0	0	490	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1038	590	0	0	510	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1205	2365	0	0	556	351	420	13	385			
Arrive On Green	0.59	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2126	1284	1715	55	1572			
Grp Volume(v), veh/h	1038	590	0	0	442	391	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1555	1770	0	1572			
Q Serve(g_s), s	30.3	0.0	0.0	0.0	29.2	29.3	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	30.3	0.0	0.0	0.0	29.2	29.3	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.83	0.97		1.00			
Lane Grp Cap(c), veh/h	1205	2365	0	0	482	425	434	0	385			
V/C Ratio(X)	0.86	0.25	0.00	0.00	0.92	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1205	2365	0	0	521	460	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	22.3	0.0	0.0	0.0	42.3	42.3	41.8	0.0	45.3			
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	24.8	27.5	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.1	0.0	0.0	0.0	15.8	14.3	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	0.0	0.0	67.0	69.9	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1628			833			780				
Approach Delay, s/veh		14.7			68.4			109.8				
Approach LOS		B			E			F				

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		34.0	47.7	38.3
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36
Max Q Clear Time (g_c+I1), s		2.0		31.4	32.3	31.3
Green Ext Time (p_c), s		2.8		0.0	2.9	1.5

Intersection Summary		
HCM 6th Ctrl Delay		51.4
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	751	10	1106	1043	0	410
Future Volume (veh/h)	751	10	1106	1043	0	410
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	818	0	1189	0	0	441
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	944	430	1674		0	1674
Arrive On Green	0.27	0.00	0.47	0.00	0.00	0.47
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	818	0	1189	0	0	441
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	12.1	0.0	14.7	0.0	0.0	4.1
Cycle Q Clear(g_c), s	12.1	0.0	14.7	0.0	0.0	4.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	944	430	1674		0	1674
V/C Ratio(X)	0.87	0.00	0.71		0.00	0.26
Avail Cap(c_a), veh/h	983	448	1674		0	1674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	11.4	0.0	0.0	8.7
Incr Delay (d2), s/veh	8.2	0.0	2.6	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	5.2	0.0	0.0	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.5	0.0	14.0	0.0	0.0	9.1
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	818		1189	A		441
Approach Delay, s/veh	27.5		14.0			9.1
Approach LOS	C		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	31.6	31.6	23.4
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	25.5	* 26	15.3
Max Q Clear Time (g_c+I1), s	16.7	6.1	14.1
Green Ext Time (p_c), s	6.1	4.6	0.5

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	728
Future Volume (vph)	290	560	120	90	270	728
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	809

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	809
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	809
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.72
Capacity (veh/h)	552	608	598	547	1120
Control Delay (s)	16.9	68.7	12.4	16.8	13.9
Approach Delay (s)	51.0		12.4	14.7	
Approach LOS	F		B	B	

Intersection Summary			
Delay	29.4		
Level of Service	D		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	826	560	588	260	290	40
Future Volume (veh/h)	826	560	588	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	888	602	632	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	815	1376	821		402	909
Arrive On Green	0.46	0.74	0.23	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	888	602	632	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	40.8	11.0	14.8	0.0	7.8	1.0
Cycle Q Clear(g_c), s	40.8	11.0	14.8	0.0	7.8	1.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	815	1376	821		402	909
V/C Ratio(X)	1.09	0.44	0.77		0.78	0.05
Avail Cap(c_a), veh/h	815	1583	1215		852	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	4.4	31.7	0.0	37.9	8.1
Incr Delay (d2), s/veh	58.9	0.1	0.9	0.0	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.0	3.1	6.2	0.0	3.3	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	82.7	4.5	32.6	0.0	39.2	8.1
LnGrp LOS	F	A	C		D	A
Approach Vol, veh/h		1490	632	A	355	
Approach Delay, s/veh		51.1	32.6		35.4	
Approach LOS		D	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		71.6		16.9	45.0	26.6
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		13.0		9.8	42.8	16.8
Green Ext Time (p_c), s		2.8		0.6	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	498	0	0	20	693	1076	5	10	488	100
Future Volume (veh/h)	330	30	498	0	0	20	693	1076	5	10	488	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	553				770	1196	6	11	542	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	808	0	926				1278	2153	11	19	666	136
Arrive On Green	0.23	0.00	0.23				0.75	1.00	1.00	0.01	0.23	0.23
Sat Flow, veh/h	3534	0	1487				3428	3596	18	1767	2883	587
Grp Volume(v), veh/h	391	0	553				770	586	616	11	330	323
Grp Sat Flow(s),veh/h/ln	1767	0	1487				1714	1763	1851	1767	1763	1708
Q Serve(g_s), s	8.6	0.0	0.0				9.3	0.0	0.0	0.6	16.0	16.1
Cycle Q Clear(g_c), s	8.6	0.0	0.0				9.3	0.0	0.0	0.6	16.0	16.1
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.34
Lane Grp Cap(c), veh/h	808	0	926				1278	1055	1108	19	407	394
V/C Ratio(X)	0.48	0.00	0.60				0.60	0.56	0.56	0.58	0.81	0.82
Avail Cap(c_a), veh/h	1178	0	1082				1278	1055	1108	100	460	446
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.14	0.14	0.14	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	11.0				8.4	0.0	0.0	44.3	32.8	32.8
Incr Delay (d2), s/veh	0.7	0.0	1.1				0.1	0.3	0.3	10.1	16.0	17.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	14.1				2.2	0.1	0.1	0.3	8.5	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	12.1				8.4	0.3	0.3	54.4	48.8	49.8
LnGrp LOS	C	A	B				A	A	A	D	D	D
Approach Vol, veh/h		944						1972			664	
Approach Delay, s/veh		19.9						3.5			49.4	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.4	58.8		25.9	38.5	25.7
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.6	11.3	18.1
Green Ext Time (p_c), s	0.0	12.0		6.7	1.4	2.3

Intersection Summary		
HCM 6th Ctrl Delay		16.3
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	110	10	310	10	1429	124	270	726	20
Future Volume (veh/h)	20	10	10	110	10	310	10	1429	124	270	726	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	115	10	323	10	1489	129	281	756	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	194	92	73	157	26	343	17	1472	128	362	1793	50
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.01	0.31	0.31	0.20	0.51	0.51
Sat Flow, veh/h	417	287	227	333	82	1072	1767	4716	408	1767	3499	97
Grp Volume(v), veh/h	41	0	0	448	0	0	10	1066	552	281	381	396
Grp Sat Flow(s),veh/h/ln	931	0	0	1487	0	0	1767	1689	1747	1767	1763	1833
Q Serve(g_s), s	0.0	0.0	0.0	23.0	0.0	0.0	0.5	28.1	28.1	13.5	12.1	12.1
Cycle Q Clear(g_c), s	1.5	0.0	0.0	26.4	0.0	0.0	0.5	28.1	28.1	13.5	12.1	12.1
Prop In Lane	0.51		0.24	0.26		0.72	1.00		0.23	1.00		0.05
Lane Grp Cap(c), veh/h	358	0	0	526	0	0	17	1054	546	362	904	940
V/C Ratio(X)	0.11	0.00	0.00	0.85	0.00	0.00	0.58	1.01	1.01	0.78	0.42	0.42
Avail Cap(c_a), veh/h	377	0	0	547	0	0	102	1054	546	362	904	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.38	0.38	0.38	0.76	0.76	0.76
Uniform Delay (d), s/veh	21.3	0.0	0.0	29.7	0.0	0.0	44.4	31.0	31.0	33.8	13.6	13.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	11.3	0.0	0.0	4.2	19.8	26.7	7.2	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	10.7	0.0	0.0	0.2	13.9	15.4	6.4	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	0.0	40.9	0.0	0.0	48.6	50.8	57.6	41.1	14.7	14.7
LnGrp LOS	C	A	A	D	A	A	D	F	F	D	B	B
Approach Vol, veh/h		41			448			1628			1058	
Approach Delay, s/veh		21.4			40.9			53.1			21.7	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.3	33.0		33.7	5.3	51.0		33.7
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.5	30.1		3.5	2.5	14.1		28.4
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	7.1		0.4

Intersection Summary		
HCM 6th Ctrl Delay		40.5
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1233	190	200	696	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1233	190	200	696	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1284	198	208	725	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1387	214	162	1588	0	468	0	411	0	496	0
Arrive On Green	0.00	0.41	0.41	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3529	524	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	1005	477	208	725	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1262	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	22.0	22.0	5.6	9.2	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.0	22.0	5.6	9.2	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Prop In Lane	0.00		0.42	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1086	515	162	1588	0	468	0	411	0	496	0
V/C Ratio(X)	0.00	0.93	0.93	1.28	0.46	0.00	0.49	0.00	0.84	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1093	519	162	1595	0	763	0	758	0	942	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.2	17.2	27.7	7.6	0.0	19.9	0.0	21.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	13.0	22.6	166.3	0.1	0.0	0.3	0.0	1.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.7	8.7	9.7	2.2	0.0	2.7	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.2	39.8	194.1	7.6	0.0	20.2	0.0	22.9	0.0	0.0	0.0
LnGrp LOS	A	C	D	F	A	A	C	A	C	A	A	A
Approach Vol, veh/h		1482			933			573			0	
Approach Delay, s/veh		33.3			49.2			21.8			0.0	
Approach LOS		C			D			C				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	29.8		21.2		39.8		21.2
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	7.6	24.0		0.0		11.2		14.9
Green Ext Time (p_c), s	0.0	0.9		0.0		3.5		1.4

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	640	190	526	390	100	260	496	743	200	556	200
Future Volume (veh/h)	197	640	190	526	390	100	260	496	743	200	556	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	210	681	202	560	415	106	277	528	790	213	591	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	210	681	202	560	415	106	277	528	790	213	591	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	16.3	36.8	16.0	18.4	16.1
Cycle Q Clear(g_c), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	16.3	36.8	16.0	18.4	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	1.30	0.88	0.40	1.55	0.89	0.29	1.37	0.53	1.61	1.24	0.57	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	44.7	28.8	56.1	41.8	33.0	57.3	39.0	38.2	56.7	38.8	38.0
Incr Delay (d2), s/veh	174.4	11.6	0.6	262.1	17.5	0.2	195.3	0.5	284.3	147.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	11.7	4.7	19.0	14.8	2.5	17.6	7.2	54.0	12.5	7.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.3	56.4	29.4	318.2	59.2	33.2	252.6	39.5	322.4	203.9	39.3	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1093			1081			1595			1017	
Approach Delay, s/veh		85.4			190.8			216.7			73.6	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	32.4	16.8	20.4	13.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	2.6	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	150.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	72.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	997	610	290
Future Vol, veh/h	120	70	200	997	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1072	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1798	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 79	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 53	357	691	-	-	-
Mov Cap-2 Maneuver	~ 53	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	322	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 864.4	2.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	77	-	-
HCM Lane V/C Ratio	0.311	-	2.653	-	-
HCM Control Delay (s)	12.5	-	$ 864.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.8	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	420	370	2426	0	0	2608	470
Future Volume (veh/h)	0	0	0	140	660	420	370	2426	0	0	2608	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	506	446	2923	0	0	3142	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	499	332	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				381	1813	1206	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				814	0	656	446	2923	0	0	3142	566
Grp Sat Flow(s),veh/h/ln				1836	0	1564	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.21		0.77	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	430	150	3362	0	0	2792	836
V/C Ratio(X)				1.61	0.00	1.53	2.97	0.87	0.00	0.00	1.13	0.68
Avail Cap(c_a), veh/h				505	0	430	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.14	0.14	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				284.4	0.0	247.9	888.6	0.5	0.0	0.0	61.6	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				60.3	0.0	47.0	42.6	0.2	0.0	0.0	50.8	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				342.4	0.0	305.9	955.0	0.5	0.0	0.0	97.5	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1470			3369			3708	
Approach Delay, s/veh					326.1			126.9			87.2	
Approach LOS					F			F			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2
Green Ext Time (p_c), s		20.1		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	143.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2366	40	280	2348	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2366	40	280	2348	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2439	41	289	2421	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2625	44	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5296	86	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1603	877	289	2421	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1838	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	70.6	71.2	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	70.6	71.2	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	941	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.93	0.93	1.56	0.59	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	941	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	36.3	36.4	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	1.2	2.2	253.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	28.6	31.7	19.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	37.5	38.6	316.5	0.1	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2480			2710	
Approach Delay, s/veh		91.1						37.9			33.8	
Approach LOS		F						D			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	73.2	49.1	2.0
Green Ext Time (p_c), s	0.0	5.2	0.0	11.9

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	460	30	494	0	290	0	917	467	120	670	0
Future Volume (veh/h)	210	460	30	494	0	290	0	917	467	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	484	32	520	0	305	0	965	492	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	386	26	0	0	0	0	1411	689	234	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1709	113		0		0	2264	1061	1767	3618	0
Grp Volume(v), veh/h	221	0	516		0.0		0	776	681	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1822				0	1763	1469	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	44.0	48.5	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	44.0	48.5	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.72	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	955	234	2514	0
V/C Ratio(X)	0.55	0.00	1.25				0.00	0.68	0.71	0.54	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	955	249	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	17.5	18.3	20.1	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	116.6				0.0	0.3	0.4	0.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	30.1				0.0	17.7	16.2	2.2	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	178.6				0.0	17.8	18.7	20.9	8.5	0.0
LnGrp LOS	D	A	F				A	B	B	C	A	A
Approach Vol, veh/h		737						1457			831	
Approach Delay, s/veh		141.5						18.2			10.4	
Approach LOS		F						B			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	15.7	50.5	38.1	13.5
Green Ext Time (p_c), s	0.0	14.1	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	589	269	451	573	30	309	1836	608	0	1808	770
Future Volume (veh/h)	570	589	269	451	573	30	309	1836	608	0	1808	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	706	520	292	382	774	33	336	1996	661	0	1965	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	299	598	25	315	1863	566	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3529	150	3428	3816	1160	0	5233	1572
Grp Volume(v), veh/h	706	520	292	382	407	400	336	1746	911	0	1965	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1824	1714	1689	1599	0	1689	1572
Q Serve(g_s), s	30.7	37.1	30.0	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	30.7	37.1	30.0	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.73	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	299	314	309	315	1648	780	0	1836	
V/C Ratio(X)	0.86	1.21	0.85	1.28	1.29	1.30	1.07	1.06	1.17	0.00	1.07	
Avail Cap(c_a), veh/h	820	430	345	299	314	309	315	1648	780	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.39	0.39	0.39	0.11	0.11	0.11	0.00	0.77	0.00
Uniform Delay (d), s/veh	59.0	61.5	58.7	75.5	75.5	75.5	65.3	1.9	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	8.9	113.9	16.6	134.3	141.7	142.1	38.0	28.6	77.3	0.0	40.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	31.1	12.9	24.2	26.0	25.6	7.5	7.3	17.5	0.0	31.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.9	175.3	75.4	209.9	217.2	217.7	103.3	30.5	79.2	0.0	91.5	0.0
LnGrp LOS	E	F	E	F	F	F	F	F	F	A	F	
Approach Vol, veh/h		1518			1189			2993			1965	A
Approach Delay, s/veh		106.1			215.0			53.5			91.5	
Approach LOS		F			F			D			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.7	60.0		29.1
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	98.7
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

12: Rosecrans St & Midway Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	510	190	194	704	424	260	1808	130	577	1327	174
Future Volume (veh/h)	390	510	190	194	704	424	260	1808	130	577	1327	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	415	543	202	206	749	451	277	1923	138	614	1412	185
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	619	265	268	734	311	317	1978	141	970	2730	358
Arrive On Green	0.12	0.18	0.18	0.15	0.21	0.21	0.09	0.41	0.41	0.57	1.00	1.00
Sat Flow, veh/h	3428	3526	1506	1767	3526	1493	3428	4816	344	3428	4520	592
Grp Volume(v), veh/h	415	543	202	206	749	451	277	1346	715	614	1055	542
Grp Sat Flow(s),veh/h/ln	1714	1763	1506	1767	1763	1493	1714	1689	1783	1714	1689	1734
Q Serve(g_s), s	19.3	24.0	20.4	17.9	33.3	24.9	12.8	62.5	63.2	19.4	0.0	0.0
Cycle Q Clear(g_c), s	19.3	24.0	20.4	17.9	33.3	24.9	12.8	62.5	63.2	19.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.34
Lane Grp Cap(c), veh/h	420	619	265	268	734	311	317	1387	732	970	2040	1048
V/C Ratio(X)	0.99	0.88	0.76	0.77	1.02	1.45	0.87	0.97	0.98	0.63	0.52	0.52
Avail Cap(c_a), veh/h	420	729	312	268	734	311	334	1391	735	970	2040	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.09	0.09	0.09
Uniform Delay (d), s/veh	70.1	64.3	62.5	65.1	63.4	35.3	71.7	46.2	46.4	29.1	0.0	0.0
Incr Delay (d2), s/veh	40.6	9.4	7.3	11.4	38.6	220.2	10.3	10.6	17.5	0.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	11.6	8.4	9.0	18.9	28.2	6.1	27.9	31.2	6.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.7	73.6	69.7	76.6	101.9	255.5	82.0	56.8	63.9	29.2	0.1	0.2
LnGrp LOS	F	E	E	E	F	F	F	E	E	C	A	A
Approach Vol, veh/h		1160			1406			2338			2211	
Approach Delay, s/veh		86.2			147.5			62.0			8.2	
Approach LOS		F			F			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	70.6	29.2	33.0	19.2	102.4	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	21.4	65.2	19.9	26.0	14.8	2.0	21.3	35.3
Green Ext Time (p_c), s	0.1	0.5	0.0	1.1	0.0	4.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	310	20	533	394	120	30	1609	718	160	1269	392
Future Volume (veh/h)	299	310	20	533	394	120	30	1609	718	160	1269	392
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	311	323	21	555	410	125	31	1676	748	167	1322	408
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	316	415	27	595	433	354	41	2040	617	210	1553	665
Arrive On Green	0.18	0.24	0.24	0.17	0.23	0.23	0.02	0.40	0.40	0.02	0.15	0.15
Sat Flow, veh/h	1767	1719	112	3428	1856	1519	1767	5066	1534	3428	3526	1510
Grp Volume(v), veh/h	311	0	344	555	410	125	31	1676	748	167	1322	408
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1714	1856	1519	1767	1689	1534	1714	1763	1510
Q Serve(g_s), s	28.1	0.0	28.1	25.5	34.8	9.3	2.8	47.3	64.4	7.8	58.5	22.8
Cycle Q Clear(g_c), s	28.1	0.0	28.1	25.5	34.8	9.3	2.8	47.3	64.4	7.8	58.5	22.8
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	0	442	595	433	354	41	2040	617	210	1553	665
V/C Ratio(X)	0.98	0.00	0.78	0.93	0.95	0.35	0.75	0.82	1.21	0.80	0.85	0.61
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2040	617	249	1553	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.59	0.59	0.59	1.00	1.00	1.00	0.66	0.66	0.66
Uniform Delay (d), s/veh	65.5	0.0	56.7	65.2	60.4	36.6	77.7	42.7	47.8	77.4	63.3	17.6
Incr Delay (d2), s/veh	46.2	0.0	7.7	12.5	18.5	0.1	9.9	3.9	109.6	8.1	4.1	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	0.0	14.0	12.2	18.6	3.5	1.4	20.3	43.3	3.8	28.8	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.6	0.0	64.4	77.7	78.9	36.7	87.6	46.5	157.4	85.5	67.4	20.4
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	C
Approach Vol, veh/h		655			1090			2455			1897	
Approach Delay, s/veh		86.8			73.4			80.8			58.9	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	70.1	32.2	43.5	8.1	76.2	33.5	42.2
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.8	66.4	27.5	30.1	4.8	60.5	30.1	36.8
Green Ext Time (p_c), s	0.0	0.0	0.2	0.5	0.0	2.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	73.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1028	190	450	937	140	450
Future Volume (veh/h)	1028	190	450	937	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1130	209	495	1030	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	990	182	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3041	542	1767	3618	373	1199
Grp Volume(v), veh/h	673	666	495	1030	650	0
Grp Sat Flow(s),veh/h/ln	1763	1727	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	17.5	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	17.5	32.1	0.0
Prop In Lane		0.31	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	580	432	2173	457	0
V/C Ratio(X)	1.14	1.15	1.15	0.47	1.42	0.00
Avail Cap(c_a), veh/h	592	580	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.5	39.2	0.0
Incr Delay (d2), s/veh	80.9	85.5	89.8	0.2	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.9	29.0	22.4	6.5	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	117.6	122.2	131.6	11.7	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1339			1525	650	
Approach Delay, s/veh	119.9			50.6	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	31.0	42.5	73.5	37.0
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	27.0	* 37	67.6	32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1	19.5	34.1
Green Ext Time (p_c), s	0.0	0.0	9.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	112.2
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	8.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	324	1401	30	0	1408
Future Vol, veh/h	0	324	1401	30	0	1408
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	334	1444	31	0	1452

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	758	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	347	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	340	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	80.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	340	-
HCM Lane V/C Ratio	-	-	0.982	-
HCM Control Delay (s)	-	-	80.2	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	10.8	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1378	1354	1431	1265	143
Future Volume (veh/h)	0	1378	1354	1431	1265	143
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1421	1396	1475	1304	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1492	1492	1268	1371	
Arrive On Green	0.00	0.42	0.42	0.42	0.40	0.00
Sat Flow, veh/h	0	3711	3618	1509	3428	1572
Grp Volume(v), veh/h	0	1421	1396	1475	1304	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1509	1714	1572
Q Serve(g_s), s	0.0	23.4	22.7	25.4	22.1	0.0
Cycle Q Clear(g_c), s	0.0	23.4	22.7	25.4	22.1	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1492	1492	1268	1371	
V/C Ratio(X)	0.00	0.95	0.94	1.16	0.95	
Avail Cap(c_a), veh/h	0	1492	1492	1268	1371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	16.7	16.5	3.2	17.4	0.0
Incr Delay (d2), s/veh	0.0	13.6	11.3	82.5	14.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.8	10.1	46.5	10.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	30.3	27.8	85.7	31.6	0.0
LnGrp LOS	A	C	C	F	C	
Approach Vol, veh/h		1421	2871		1304	A
Approach Delay, s/veh		30.3	57.5		31.6	
Approach LOS		C	E		C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		29.2		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		25.4		24.1		27.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		44.6
HCM 6th LOS		D

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	90	5	60	90	1189	30	50	1102	110
Future Volume (veh/h)	80	0	100	90	5	60	90	1189	30	50	1102	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	102	6	68	102	1351	34	57	1252	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	222	33	188	443	29	328	130	2167	55	78	1853	185
Arrive On Green	0.23	0.00	0.23	0.23	0.23	0.23	0.07	0.43	0.43	0.04	0.40	0.40
Sat Flow, veh/h	504	144	812	1258	125	1417	1767	5076	128	1767	4660	465
Grp Volume(v), veh/h	205	0	0	102	0	74	102	899	486	57	907	470
Grp Sat Flow(s),veh/h/ln	1461	0	0	1258	0	1542	1767	1689	1826	1767	1689	1748
Q Serve(g_s), s	3.7	0.0	0.0	0.0	0.0	1.9	2.8	10.3	10.3	1.6	10.9	10.9
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.2	0.0	1.9	2.8	10.3	10.3	1.6	10.9	10.9
Prop In Lane	0.44		0.56	1.00		0.92	1.00		0.07	1.00		0.27
Lane Grp Cap(c), veh/h	443	0	0	443	0	357	130	1442	780	78	1343	695
V/C Ratio(X)	0.46	0.00	0.00	0.23	0.00	0.21	0.79	0.62	0.62	0.73	0.68	0.68
Avail Cap(c_a), veh/h	1035	0	0	970	0	1002	193	1477	799	240	1559	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	0.0	15.8	0.0	15.3	22.5	11.0	11.0	23.3	12.3	12.3
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.1	6.3	0.9	1.7	4.9	1.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	0.9	0.0	0.6	1.3	3.2	3.6	0.7	3.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	0.0	15.9	0.0	15.4	28.8	12.0	12.7	28.3	13.3	14.3
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		205			176			1487			1434	
Approach Delay, s/veh		17.1			15.7			13.4			14.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	26.5		16.3	8.0	25.0		16.3
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.6	12.3		8.0	4.8	12.9		5.2
Green Ext Time (p_c), s	0.0	6.8		0.8	0.0	6.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	271.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	797	554	1069	1302	30
Future Vol, veh/h	0	797	554	1069	1302	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	839	583	1125	1371	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	722	1413	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 315	~ 244	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 309	~ 242	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 806.4	231.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 242	-	309	-	-
HCM Lane V/C Ratio	2.41	-	2.715	-	-
HCM Control Delay (s)	$ 678.7	-	$ 806.4	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	47.3	-	70.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	145

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	603	0	2070	2037	212
Future Vol, veh/h	0	603	0	2070	2037	212
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	622	0	2134	2100	219

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1181	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 181	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 177	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1183.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	177	-	-
HCM Lane V/C Ratio	-	3.512	-	-
HCM Control Delay (s)	-	$ 1183.6	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	59.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	20	120	150	60	110	280	1746	20	34	2466	139
Future Volume (veh/h)	200	20	120	150	60	110	280	1746	20	34	2466	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	222	22	133	167	67	122	311	1940	22	38	2740	154
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1590	682	49	1253	70
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.45	0.45	0.03	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1511	1767	3386	188
Grp Volume(v), veh/h	222	22	133	167	67	122	311	1940	22	38	1410	1484
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1511	1767	1763	1812
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	63.1	1.1	3.0	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	63.1	1.1	3.0	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1590	682	49	652	670
V/C Ratio(X)	1.66	0.05	0.34	0.87	0.13	0.34	1.52	1.22	0.03	0.78	2.16	2.21
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1590	682	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	38.4	21.4	67.6	44.1	44.1
Incr Delay (d2), s/veh	327.2	0.0	0.2	14.2	0.0	0.2	257.7	104.9	0.0	15.1	527.7	551.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	0.6	3.9	6.6	1.8	3.4	21.9	49.9	0.4	1.6	118.0	125.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	391.9	40.3	43.6	75.7	37.8	40.5	319.6	143.3	21.4	82.7	571.8	595.1
LnGrp LOS	F	D	D	E	D	D	F	F	C	F	F	F
Approach Vol, veh/h		377			356			2273			2932	
Approach Delay, s/veh		248.5			56.5			166.2			577.3	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	71.8	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	5.0	65.1	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	367.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	5566					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2645	2402	2046	2546	190
Future Vol, veh/h	0	2645	2402	2046	2546	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2939	2669	2273	2829	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1435	3050	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 122	~ 106	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 120	~ 105	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 10637	$ 5974.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 105	-	120	-	-
HCM Lane V/C Ratio	25.418	-	24.491	-	-
HCM Control Delay (s)	$ 11063	-	$ 10637	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	323.6	-	355.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	300	230	350	10	504	60	270	10	130	50
Future Volume (veh/h)	10	150	300	230	350	10	504	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	316	242	368	11	531	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	184	369	185	629	19	494	47	213	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	524	1049	904	1789	53	821	97	439	33	1267	466
Grp Volume(v), veh/h	11	0	474	242	0	379	878	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1573	904	0	1843	1357	0	0	1766	0	0
Q Serve(g_s), s	0.6	0.0	16.8	4.3	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	16.8	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.03	0.60		0.32	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	553	185	0	648	755	0	0	920	0	0
V/C Ratio(X)	0.04	0.00	0.86	1.31	0.00	0.58	1.16	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	553	185	0	648	755	0	0	920	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	18.0	29.2	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	13.2	171.7	0.0	1.4	87.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.4	11.4	0.0	4.0	28.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	31.2	200.9	0.0	17.3	104.6	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		485			621			878			201	
Approach Delay, s/veh		31.0			88.9			104.6			9.0	
Approach LOS		C			F			F			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.0	34.0	26.0	34.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.1	29.1	21.1	29.1
Max Q Clear Time (g_c+I1), s	18.8	6.0	23.1	31.1
Green Ext Time (p_c), s	1.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.0
HCM 6th LOS	E

Year 2050A + P3 PM — Old Town Complex

23: Old Town Ave & Moore St — 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	902	544	50	0	530	280
Future Volume (veh/h)	5	10	30	80	190	310	902	544	50	0	530	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	980	591	54	0	576	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1062	97	0	364	192
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1669	153	0	1133	598
Grp Volume(v), veh/h	49	0	0	631	0	0	980	0	645	0	0	880
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1822	0	0	1731
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	15.9	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	15.9	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.08	0.00		0.35
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	2.13	0.00	0.56	0.00	0.00	1.58
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.2	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	517.1	0.0	0.4	0.0	0.0	270.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	74.4	0.0	5.3	0.0	0.0	51.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	546.7	0.0	8.6	0.0	0.0	297.9
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1625			880	
Approach Delay, s/veh		23.8			251.2			333.1			297.9	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2				
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3				
Max Q Clear Time (g_c+I1), s		17.9		3.9	22.8	27.7		21.3				
Green Ext Time (p_c), s		3.1		0.1	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		302.4
HCM 6th LOS		F

Year 2050A + P3 PM — Old Town Complex

24: Hancock St/Old Town Ave & I-5 SB Off-Ramp — 08/13/2020

Intersection	
Intersection Delay, s/veh	262
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	761	0	904	280	0
Future Vol, veh/h	530	761	0	904	280	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	846	0	1004	311	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	220.7	395.2	22.4
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	904	530	761	280
LT Vol	0	530	0	0
Through Vol	904	0	0	280
RT Vol	0	0	761	0
Lane Flow Rate	1004	589	846	311
Geometry Grp	2	7	7	2
Degree of Util (X)	1.827	1.251	1.515	0.609
Departure Headway (Hd)	6.396	9.092	7.846	7.893
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	583	406	474	460
Service Time	4.396	6.792	5.546	5.893
HCM Lane V/C Ratio	1.722	1.451	1.785	0.676
HCM Control Delay	395.2	159.4	263.4	22.4
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	64.2	21.2	36.6	4

Intersection	
Intersection Delay, s/veh	273.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	742	80	110	20	811	5	234	10	5	5
Future Vol, veh/h	10	400	742	80	110	20	811	5	234	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	781	84	116	21	854	5	246	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	149.9	20.8	464.7	13.9
HCM LOS	F	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	77%	2%	0%	38%	50%
Vol Thru, %	0%	98%	0%	52%	25%
Vol Right, %	22%	0%	100%	10%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1050	410	742	210	20
LT Vol	811	10	0	80	10
Through Vol	5	400	0	110	5
RT Vol	234	0	742	20	5
Lane Flow Rate	1105	432	781	221	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.982	0.844	1.374	0.447	0.048
Departure Headway (Hd)	6.676	9.418	8.674	9.958	10.399
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	553	388	430	365	347
Service Time	4.676	7.118	6.374	7.958	8.399
HCM Lane V/C Ratio	1.998	1.113	1.816	0.605	0.061
HCM Control Delay	464.7	46.4	207.1	20.8	13.9
HCM Lane LOS	F	E	F	C	B
HCM 95th-tile Q	71.8	7.9	27.3	2.2	0.2

Intersection	
Intersection Delay, s/veh	389.8
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	990	145	682
Future Vol, veh/h	60	70	200	990	145	682
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	1207	177	832
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13.9	561.4	201.9
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	17%	100%	0%	0%
Vol Thru, %	83%	0%	0%	18%
Vol Right, %	0%	0%	100%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1190	60	70	827
LT Vol	200	60	0	0
Through Vol	990	0	0	145
RT Vol	0	0	70	682
Lane Flow Rate	1451	73	85	1009
Geometry Grp	2	7	7	2
Degree of Util (X)	2.204	0.166	0.165	1.384
Departure Headway (Hd)	5.921	10.036	8.77	6.173
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	360	411	595
Service Time	3.921	7.736	6.47	4.173
HCM Lane V/C Ratio	2.325	0.203	0.207	1.696
HCM Control Delay	561.4	14.7	13.2	201.9
HCM Lane LOS	F	B	B	F
HCM 95th-tile Q	96.7	0.6	0.6	36.3

Intersection	
Intersection Delay, s/veh	166.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	41	770	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	41	770	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	49	917	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	300.1	49.1	20.6
HCM LOS	-	F	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	26%
Vol Thru, %	100%	0%	100%	5%	74%
Vol Right, %	0%	100%	0%	94%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	821	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	41	160
RT Vol	0	250	0	770	0
Lane Flow Rate	500	298	0	977	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.973	0.521	0	1.614	0.508
Departure Headway (Hd)	8.626	7.898	9.726	5.946	8.841
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	425	461	0	616	412
Service Time	6.326	5.598	7.726	3.946	6.841
HCM Lane V/C Ratio	1.176	0.646	0	1.586	0.621
HCM Control Delay	67	18.9	12.7	300.1	20.6
HCM Lane LOS	F	C	N	F	C
HCM 95th-tile Q	11.7	2.9	0	53.3	2.8

Intersection	
Intersection Delay, s/veh	132.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	174	240	150	0	0	0	150	120	250	330	140	130
Future Vol, veh/h	174	240	150	0	0	0	150	120	250	330	140	130
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	191	264	165	0	0	0	165	132	275	363	154	143
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	132.4	93.9	165.2
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	31%	55%
Vol Thru, %	23%	43%	23%
Vol Right, %	48%	27%	22%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	564	600
LT Vol	150	174	330
Through Vol	120	240	140
RT Vol	250	150	130
Lane Flow Rate	571	620	659
Geometry Grp	1	1	1
Degree of Util (X)	1.083	1.197	1.279
Departure Headway (Hd)	7.792	7.517	7.748
Convergence, Y/N	Yes	Yes	Yes
Cap	469	490	475
Service Time	5.792	5.517	5.748
HCM Lane V/C Ratio	1.217	1.265	1.387
HCM Control Delay	93.9	132.4	165.2
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.3	21.7	25.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2091	0	0	698	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2091	0	0	698	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2201	0	0	735	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2201	0	0	735	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	11.5	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	11.5	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.90	0.00	0.00	0.42	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	13.9	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.6	0.0	0.0	0.8	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.2	0.0	0.0	4.5	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.6	0.0	0.0	14.7	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2685			1451	
Approach Delay, s/veh					32.0			7.0			28.6	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.4			17.0	47.4		21.6
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			14.0	40.3		11.9
Green Ext Time (p_c), s		37.2			0.0	0.0		2.0

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1211	170	300	608	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1211	170	300	608	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1248	175	309	627	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1248	175	309	627	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	12.3	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	12.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.26	0.42	0.90	0.44	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.62	0.62	0.88	0.88	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	13.8	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	123.7	1.9	22.8	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	26.6	2.8	4.2	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	151.7	23.1	61.1	14.6	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1423			936	
Approach Delay, s/veh		43.7						135.9			30.0	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	35.0		38.0		48.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	9.7	32.1		35.1		14.3
Green Ext Time (p_c), s	0.0	0.0		0.0		5.3

Intersection Summary	
HCM 6th Ctrl Delay	69.8
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	1061	0	0	620	268
Future Volume (veh/h)	120	0	150	80	70	200	230	1061	0	0	620	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1117	0	0	653	282
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	41	0	51	377	396	317	210	1478	0	0	965	413
Arrive On Green	0.06	0.00	0.06	0.21	0.21	0.21	0.12	0.52	0.00	0.00	0.34	0.34
Sat Flow, veh/h	727	0	911	1767	1856	1485	1767	2897	0	0	2897	1209
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1117	0	0	653	282
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1485	1767	1411	0	0	1411	1209
Q Serve(g_s), s	4.0	0.0	0.0	2.8	2.3	9.3	8.5	22.3	0.0	0.0	14.2	14.3
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.8	2.3	9.3	8.5	22.3	0.0	0.0	14.2	14.3
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	92	0	0	377	396	317	210	1478	0	0	965	413
V/C Ratio(X)	3.10	0.00	0.00	0.22	0.19	0.67	1.15	0.76	0.00	0.00	0.68	0.68
Avail Cap(c_a), veh/h	92	0	0	642	674	540	210	1799	0	0	1270	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	0.0	23.2	23.0	25.8	31.5	13.4	0.0	0.0	20.2	20.2
Incr Delay (d2), s/veh	973.6	0.0	0.0	0.1	0.1	0.9	109.3	1.1	0.0	0.0	1.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.3	0.0	0.0	1.1	1.0	3.2	9.9	6.3	0.0	0.0	4.5	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1007.4	0.0	0.0	23.3	23.1	26.7	140.8	14.6	0.0	0.0	21.2	22.8
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	C
Approach Vol, veh/h		284			369			1359			935	
Approach Delay, s/veh		1007.4			25.2			37.0			21.7	
Approach LOS		F			C			D			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.9		8.0	13.0	28.9		21.7
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		24.3		6.0	10.5	16.3		11.3
Green Ext Time (p_c), s		5.9		0.0	0.0	6.0		1.2

Intersection Summary	
HCM 6th Ctrl Delay	124.2
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	801	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	801	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	953	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1182	0	853				0	639	117	336	643	0
Arrive On Green	0.33	0.00	0.33				0.00	0.22	0.22	0.19	0.19	0.00
Sat Flow, veh/h	3534	0	1529				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	953	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1529				0	1763	1715	1767	1689	0
Q Serve(g_s), s	13.8	0.0	1.8				0.0	9.2	9.3	10.7	2.7	0.0
Cycle Q Clear(g_c), s	13.8	0.0	1.8				0.0	9.2	9.3	10.7	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1182	0	853				0	383	373	336	643	0
V/C Ratio(X)	0.81	0.00	0.12				0.00	0.79	0.80	1.05	0.29	0.00
Avail Cap(c_a), veh/h	1936	0	1180				0	439	427	336	643	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	6.1				0.0	20.8	20.9	22.8	19.5	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0				0.0	7.3	8.1	63.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.8				0.0	4.2	4.2	10.0	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	6.1				0.0	28.1	29.0	86.3	19.8	0.0
LnGrp LOS	B	A	A				A	C	C	F	B	A
Approach Vol, veh/h		1057						604			542	
Approach Delay, s/veh		16.4						28.5			63.2	
Approach LOS		B						C			E	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				16.2		25.0		15.0
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		30.8		10.7
Max Q Clear Time (g_c+I1), s				11.3		15.8		12.7
Green Ext Time (p_c), s				0.7		2.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

33: Pacific Hwy & Sassafras St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	130	270	628	70	254	1317	80
Future Volume (veh/h)	100	290	140	430	420	130	270	628	70	254	1317	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	133	276	641	71	259	1344	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	104	416	412	282	452	140	109	1090	119	178	1445	88
Arrive On Green	0.06	0.27	0.27	0.19	0.40	0.40	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	1767	1537	1524	1464	1117	346	1767	4604	503	1464	4871	297
Grp Volume(v), veh/h	102	296	143	439	0	562	276	468	244	259	932	494
Grp Sat Flow(s),veh/h/ln	1767	1537	1524	1464	0	1464	1767	1689	1730	1464	1689	1791
Q Serve(g_s), s	6.2	18.6	8.1	20.6	0.0	39.6	6.6	13.1	13.4	13.0	28.6	28.6
Cycle Q Clear(g_c), s	6.2	18.6	8.1	20.6	0.0	39.6	6.6	13.1	13.4	13.0	28.6	28.6
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	104	416	412	282	0	592	109	799	409	178	1002	531
V/C Ratio(X)	0.98	0.71	0.35	1.55	0.00	0.95	2.53	0.59	0.60	1.45	0.93	0.93
Avail Cap(c_a), veh/h	104	461	457	282	0	635	109	803	411	178	1006	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	35.2	31.3	43.1	0.0	30.7	50.1	36.1	36.2	46.9	36.5	36.5
Incr Delay (d2), s/veh	80.6	3.6	0.2	266.1	0.0	23.1	713.2	1.6	3.3	232.3	14.8	23.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.3	3.0	28.2	0.0	17.3	24.5	5.5	6.0	16.2	13.6	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.8	38.7	31.5	309.2	0.0	53.8	763.3	37.7	39.5	279.2	51.2	59.9
LnGrp LOS	F	D	C	F	A	D	F	D	D	F	D	E
Approach Vol, veh/h		541			1001			988			1685	
Approach Delay, s/veh		54.2			165.8			240.8			88.8	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.6	25.0	33.8	11.0	37.0	10.7	48.1
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	15.4	22.6	20.6	8.6	30.6	8.2	41.6
Green Ext Time (p_c), s	0.0	4.8	0.0	1.1	0.0	1.1	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	138.3
HCM 6th LOS	F

34: Pacific Hwy & Laurel St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	529	1810	180	130	1040	130	170	549	170	220	1139	939
Future Volume (veh/h)	529	1810	180	130	1040	130	170	549	170	220	1139	939
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	608	2080	207	149	1195	149	195	631	195	253	1309	1079
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	806	100	155	1610	487	276	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.42	0.42	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3142	390	1767	3832	1158	1767	5066	1537
Grp Volume(v), veh/h	608	1114	1173	149	668	676	195	554	272	253	1309	1079
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1770	1767	1689	1613	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	15.9	16.4	19.7	24.9	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	15.9	16.4	19.7	24.9	68.4
Prop In Lane	1.00		0.18	1.00		0.22	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	454	155	1419	678	276	2475	1140
V/C Ratio(X)	1.39	1.55	1.61	0.94	1.48	1.49	1.26	0.39	0.40	0.92	0.53	0.95
Avail Cap(c_a), veh/h	437	718	728	159	452	454	155	1419	678	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	28.2	28.3	58.2	24.7	16.4
Incr Delay (d2), s/veh	190.0	255.5	280.8	52.3	227.0	231.3	156.9	0.8	1.8	25.5	0.8	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.4	75.3	81.6	7.6	44.3	45.1	12.3	6.7	6.8	10.8	10.2	32.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	242.7	297.0	322.3	115.6	279.1	283.4	220.8	29.0	30.1	83.6	25.5	33.0
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	C
Approach Vol, veh/h		2895			1493			1021			2641	
Approach Delay, s/veh		295.9			264.7			65.9			34.1	
Approach LOS		F			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	65.0	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	21.7	18.4	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	175.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1910	3050	2080	220	134	60
Future Volume (veh/h)	1910	3050	2080	220	134	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2054	3280	2237	0	144	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4122	2180		175	155
Arrive On Green	0.35	0.81	0.43	0.00	0.10	0.10
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2054	3280	2237	0	144	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	41.1	51.6	0.0	9.6	4.7
Cycle Q Clear(g_c), s	41.6	41.1	51.6	0.0	9.6	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4122	2180		175	155
V/C Ratio(X)	1.73	0.80	1.03		0.82	0.42
Avail Cap(c_a), veh/h	1188	4122	2180		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	5.9	34.2	0.0	53.0	50.8
Incr Delay (d2), s/veh	331.3	1.7	26.3	0.0	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	41.8	11.0	25.9	0.0	4.4	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	370.5	7.6	60.5	0.0	56.8	51.5
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5334	2237	A	209	
Approach Delay, s/veh		147.3	60.5		55.1	
Approach LOS		F	E		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.9		17.1	46.0	56.9
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		43.1		11.6	43.6	53.6
Green Ext Time (p_c), s		36.4		0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	119.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	210	290	337	114	311	220	1210	288	318	1260	230
Future Volume (veh/h)	190	210	290	337	114	311	220	1210	288	318	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	219	302	351	119	324	229	1260	300	331	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	257	415	337	178	463	379	268	1028	240	249	1506	779
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3428	1856	1508	1767	1856	1517	3428	2818	659	1767	3526	1549
Grp Volume(v), veh/h	198	219	302	351	119	324	229	780	780	331	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1508	1767	1856	1517	1714	1763	1714	1767	1763	1549
Q Serve(g_s), s	6.5	12.0	22.4	11.6	5.9	23.5	7.6	42.0	42.0	16.2	39.1	10.5
Cycle Q Clear(g_c), s	6.5	12.0	22.4	11.6	5.9	23.5	7.6	42.0	42.0	16.2	39.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	257	415	337	178	463	379	268	643	625	249	1506	779
V/C Ratio(X)	0.77	0.53	0.90	1.97	0.26	0.86	0.85	1.21	1.25	1.33	0.87	0.31
Avail Cap(c_a), veh/h	339	499	406	178	496	406	268	643	625	249	1509	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	39.3	43.4	51.8	34.6	41.2	52.4	36.6	36.6	49.5	30.1	16.9
Incr Delay (d2), s/veh	5.3	1.0	19.3	457.0	0.1	14.5	21.7	109.8	124.4	174.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.6	9.8	27.6	2.6	9.9	4.0	36.8	38.3	19.0	16.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	40.4	62.7	508.7	34.8	55.7	74.2	146.4	161.0	223.6	36.1	17.2
LnGrp LOS	E	D	E	F	C	E	E	F	F	F	D	B
Approach Vol, veh/h		719			794			1789			1883	
Approach Delay, s/veh		54.5			252.8			143.5			66.7	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.3	13.4	54.5	13.0	34.2
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	18.2	44.0	13.6	24.4	9.6	41.1	8.5	25.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	6.6	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	120.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050A + P3 PM

Old Town Complex

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1341	320	290	590	0	0	0	0	190	0	1168
Future Volume (veh/h)	0	1341	320	290	590	0	0	0	0	190	0	1168
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1412	337	305	621	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1589	709	934	2725	0				231	0	
Arrive On Green	0.00	0.45	0.45	0.54	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1412	337	305	621	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	36.7	15.0	4.9	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	36.7	15.0	4.9	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1589	709	934	2725	0				231	0	
V/C Ratio(X)	0.00	0.89	0.48	0.33	0.23	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	934	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.34	0.34	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.2	19.2	17.7	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.2	5.2	1.7	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.0	19.4	17.8	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1749			926						200	A
Approach Delay, s/veh		24.7			5.9						50.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	32.2	50.1		17.7		82.3
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	6.9	38.7		13.1		2.0
Green Ext Time (p_c), s	0.6	6.4		0.1		2.9

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050A + P3 PM

Old Town Complex

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	957	574	0	0	560	380	320	10	640	0	0	0
Future Volume (veh/h)	957	574	0	0	560	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	967	580	0	0	566	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1059	2253	0	0	552	375	488	15	447			
Arrive On Green	0.52	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2065	1338	1717	53	1572			
Grp Volume(v), veh/h	967	580	0	0	506	444	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1547	1770	0	1572			
Q Serve(g_s), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.86	0.97		1.00			
Lane Grp Cap(c), veh/h	1059	2253	0	0	494	433	503	0	447			
V/C Ratio(X)	0.91	0.26	0.00	0.00	1.03	1.03	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1059	2253	0	0	494	433	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.52	0.52	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.0	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	6.8	0.1	0.0	0.0	47.1	49.8	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	0.0	18.0	16.1	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.1	0.0	0.0	83.1	85.8	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1547			950			979				
Approach Delay, s/veh		18.7			84.4			176.0				
Approach LOS		B			F			F				

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		69.4		33.0	36.4	33.0
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5
Max Green Setting (Gmax), s		61.5		28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s		2.0		30.4	27.8	30.0
Green Ext Time (p_c), s		2.7		0.0	0.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	80.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1089	10	374	849	0	1270
Future Volume (veh/h)	1089	10	374	849	0	1270
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1156	0	394	0	0	1337
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1252	570	1541		0	1541
Arrive On Green	0.35	0.00	0.44	0.00	0.00	0.44
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1156	0	394	0	0	1337
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	21.3	0.0	4.8	0.0	0.0	23.4
Cycle Q Clear(g_c), s	21.3	0.0	4.8	0.0	0.0	23.4
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1252	570	1541		0	1541
V/C Ratio(X)	0.92	0.00	0.26		0.00	0.87
Avail Cap(c_a), veh/h	1273	580	1541		0	1541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	12.1	0.0	0.0	17.4
Incr Delay (d2), s/veh	11.3	0.0	0.4	0.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	1.8	0.0	0.0	9.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.4	0.0	12.5	0.0	0.0	24.2
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1156		394	A		1337
Approach Delay, s/veh	32.4		12.5			24.2
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.2	35.2	32.8
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.8	25.4	23.3
Green Ext Time (p_c), s	3.5	3.6	0.7

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX O

YEAR 2050 WITH ALTERNATIVE 3 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7038	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1290
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6971	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1278
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2330
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2174
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.0		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8435	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1547
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2330
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2174
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.0		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Unfamiliar	Final Speed Adjustment Factor (SAF)	0.863
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9845	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1805
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2244
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2094
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	54.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8216	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1819
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.4
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8690	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1924
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9169	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2030
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9351	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2070
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8591	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1902
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.3
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9370	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2075
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9892	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2190
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9827	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2176
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9491	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2101
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	47.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2287
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10912	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2416
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10847	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2402
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7911	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2189
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8650	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2394
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9112	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2522
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9057	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2506
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.13
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10730	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2376
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11631	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2575
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.16
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12309	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2725
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.23
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12249	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2712
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.23
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8789	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9541	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2112
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.6
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10096	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2235
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.01
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10040	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2223
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3871	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1058
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3069	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	839
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.5
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4929	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1347
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4743	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1296
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4278	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1169
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5761	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1575
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5875	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2141
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.5
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4625	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1686
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6998	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1530
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9501	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2078
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9725	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2127
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7565	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1654
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6687	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1828
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9017	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2465
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.11
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9208	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2014
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7233	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1582
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7127	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1946
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9627	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2629
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.18
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9838	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2149
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 3: Without Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7713	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1685
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX P

YEAR 2050 NO ACTION ALTERNATIVE INCLUDING AN APM INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	726
Future Volume (vph)	190	210	90	140	140	726
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	789

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	789
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	789
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.70
Capacity (veh/h)	610	667	741	577	1120
Control Delay (s)	10.4	9.6	9.9	10.5	13.3
Approach Delay (s)	10.0		9.9	12.9	
Approach LOS	A		A	B	

Intersection Summary			
Delay	11.6		
Level of Service	B		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	256	120	756	60	280	190
Future Volume (veh/h)	256	120	756	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	272	128	804	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	333	1116	1165		525	537
Arrive On Green	0.19	0.60	0.33	0.00	0.15	0.15
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	272	128	804	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	7.5	1.5	10.1	0.0	4.1	4.9
Cycle Q Clear(g_c), s	7.5	1.5	10.1	0.0	4.1	4.9
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	333	1116	1165		525	537
V/C Ratio(X)	0.82	0.11	0.69		0.57	0.38
Avail Cap(c_a), veh/h	687	2003	2145		1514	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	4.3	14.8	0.0	20.0	12.7
Incr Delay (d2), s/veh	1.9	0.0	0.3	0.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.4	3.5	0.0	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.7	4.4	15.1	0.0	20.4	12.8
LnGrp LOS	C	A	B		C	B
Approach Vol, veh/h		400	804	A	500	
Approach Delay, s/veh		16.1	15.1		17.3	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.6		14.3	13.8	22.8
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.5		6.9	9.5	12.1
Green Ext Time (p_c), s		0.5		0.9	0.3	3.8

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	250	0	0	10	360	266	5	10	746	220
Future Volume (veh/h)	140	5	250	0	0	10	360	266	5	10	746	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	263				379	280	5	11	785	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	840	0	572				461	1746	31	20	976	289
Arrive On Green	0.24	0.00	0.24				0.13	0.49	0.49	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1517				3428	3541	63	1767	2640	780
Grp Volume(v), veh/h	151	0	263				379	139	146	11	524	493
Grp Sat Flow(s),veh/h/ln	1767	0	1517				1714	1763	1841	1767	1763	1657
Q Serve(g_s), s	1.9	0.0	7.4				6.1	2.5	2.5	0.4	15.1	15.1
Cycle Q Clear(g_c), s	1.9	0.0	7.4				6.1	2.5	2.5	0.4	15.1	15.1
Prop In Lane	1.00		1.00				1.00		0.03	1.00		0.47
Lane Grp Cap(c), veh/h	840	0	572				461	869	908	20	652	613
V/C Ratio(X)	0.18	0.00	0.46				0.82	0.16	0.16	0.55	0.80	0.80
Avail Cap(c_a), veh/h	1875	0	1016				461	869	908	159	711	668
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	13.5				23.8	7.9	7.9	27.8	16.0	16.0
Incr Delay (d2), s/veh	0.2	0.0	1.0				10.8	0.1	0.1	8.7	6.6	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	6.9				3.0	0.8	0.8	0.2	6.4	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	14.4				34.6	8.0	8.0	36.5	22.6	23.0
LnGrp LOS	B	A	B				C	A	A	D	C	C
Approach Vol, veh/h		414						664			1028	
Approach Delay, s/veh		15.5						23.2			22.9	
Approach LOS		B						C			C	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	5.0	32.8	18.7	12.0	25.8
Change Period (Y+Rc), s	4.4	4.9	5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3	30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.4	4.5	9.4	8.1	17.1
Green Ext Time (p_c), s	0.0	1.7	2.6	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	80	10	210	50	416	30	130	686	40
Future Volume (veh/h)	10	10	10	80	10	210	50	416	30	130	686	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	83	10	219	52	433	31	135	715	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	219	210	165	183	50	329	73	1440	102	174	1201	70
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.30	0.30	0.10	0.36	0.36
Sat Flow, veh/h	386	678	532	289	161	1060	1767	4811	339	1767	3373	198
Grp Volume(v), veh/h	30	0	0	312	0	0	52	302	162	135	373	384
Grp Sat Flow(s),veh/h/ln	1597	0	0	1510	0	0	1767	1689	1773	1767	1763	1808
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	0.0	1.4	3.3	3.4	3.6	8.4	8.4
Cycle Q Clear(g_c), s	0.6	0.0	0.0	8.5	0.0	0.0	1.4	3.3	3.4	3.6	8.4	8.4
Prop In Lane	0.33		0.33	0.27		0.70	1.00		0.19	1.00		0.11
Lane Grp Cap(c), veh/h	594	0	0	562	0	0	73	1011	531	174	628	644
V/C Ratio(X)	0.05	0.00	0.00	0.56	0.00	0.00	0.71	0.30	0.31	0.78	0.60	0.60
Avail Cap(c_a), veh/h	1041	0	0	1020	0	0	204	1746	917	386	1093	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	14.4	0.0	0.0	23.0	13.1	13.1	21.4	12.8	12.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	4.6	0.2	0.4	2.8	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.6	0.0	0.0	0.6	1.1	1.2	1.5	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.0	0.0	14.8	0.0	0.0	27.6	13.3	13.6	24.2	14.0	14.0
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			312			516			892	
Approach Delay, s/veh		11.8			14.8			14.8			15.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	9.2	19.4	19.9	6.4	22.2	19.9
Change Period (Y+Rc), s	4.4	4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	10.6	25.1	30.1	5.6	30.1	30.1
Max Q Clear Time (g_c+I1), s	5.6	5.4	2.6	3.4	10.4	10.5
Green Ext Time (p_c), s	0.1	3.8	0.1	0.0	6.2	1.3

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	356	230	180	606	0	180	0	150	0	0	0
Future Volume (veh/h)	0	356	230	180	606	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	367	237	186	625	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	886	387	231	1573	0	426	0	314	0	380	0
Arrive On Green	0.00	0.33	0.33	0.13	0.57	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2790	1161	1767	2849	0	1258	0	1531	0	1856	0
Grp Volume(v), veh/h	0	367	237	186	625	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1161	1767	1388	0	1258	0	1531	0	1856	0
Q Serve(g_s), s	0.0	4.6	7.3	4.4	5.4	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.6	7.3	4.4	5.4	0.0	5.9	0.0	3.8	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	886	387	231	1573	0	426	0	314	0	380	0
V/C Ratio(X)	0.00	0.41	0.61	0.81	0.40	0.00	0.44	0.00	0.49	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1557	680	231	2274	0	1052	0	1076	0	1342	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.1	12.0	18.1	5.2	0.0	15.9	0.0	15.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	1.5	17.3	0.1	0.0	0.3	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.7	2.7	0.9	0.0	1.5	0.0	1.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.3	13.5	35.4	5.3	0.0	16.2	0.0	15.5	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		604			811			341			0	
Approach Delay, s/veh		12.2			12.2			15.9			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	19.2	13.7	29.2	13.7
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	6.4	9.3	0.0	7.4	7.9
Green Ext Time (p_c), s	0.0	3.6	0.0	3.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	310	230	336	270	180	280	503	226	80	343	200
Future Volume (veh/h)	110	310	230	336	270	180	280	503	226	80	343	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.93	1.00		0.95	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	118	333	247	361	290	194	301	541	243	86	369	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	144	876	529	325	518	407	139	998	483	102	979	387
Arrive On Green	0.08	0.32	0.32	0.12	0.35	0.35	0.08	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1767	2776	1285	2699	1461	1148	1767	3526	1178	1391	3526	1395
Grp Volume(v), veh/h	118	333	247	361	290	194	301	541	243	86	369	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1285	1350	1461	1148	1767	1763	1178	1391	1763	1395
Q Serve(g_s), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.7	17.5	6.9	9.5	14.9
Cycle Q Clear(g_c), s	7.4	10.5	16.3	13.6	18.0	14.8	8.9	14.7	17.5	6.9	9.5	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	876	529	325	518	407	139	998	483	102	979	387
V/C Ratio(X)	0.82	0.38	0.47	1.11	0.56	0.48	2.16	0.54	0.50	0.84	0.38	0.55
Avail Cap(c_a), veh/h	147	888	535	325	522	410	139	1184	545	111	1187	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	30.0	25.6	49.6	29.3	28.3	52.0	34.3	25.3	51.6	32.9	34.8
Incr Delay (d2), s/veh	27.2	0.3	0.8	82.8	0.9	0.5	545.1	0.5	0.8	36.3	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.6	5.0	8.3	6.4	4.1	25.0	6.3	4.9	3.4	4.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	30.4	26.4	132.5	30.3	28.7	597.1	34.7	26.1	88.0	33.0	35.3
LnGrp LOS	E	C	C	F	C	C	F	C	C	F	C	D
Approach Vol, veh/h		698			845			1085			670	
Approach Delay, s/veh		37.1			73.6			188.8			40.8	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.5	14.3	38.1	14.6	45.9	13.7	38.7
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	18.3	10.9	16.9	9.4	20.0	8.9	19.5
Green Ext Time (p_c), s	0.0	3.7	0.0	2.1	0.0	1.6	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	97.1
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	600	610	140
Future Vol, veh/h	50	30	70	600	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	612	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1246	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	177	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	345	706	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43.5	1.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	172	-	-
HCM Lane V/C Ratio	0.101	-	0.475	-	-
HCM Control Delay (s)	10.7	-	43.5	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	396	360	2020	0	0	2596	630
Future Volume (veh/h)	0	0	0	90	650	396	360	2020	0	0	2596	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	408	371	2082	0	0	2676	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				88	644	422	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				260	1904	1248	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				658	0	513	371	2082	0	0	2676	649
Grp Sat Flow(s),veh/h/ln				1843	0	1569	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.80	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	531	341	3632	0	0	2463	736
V/C Ratio(X)				1.05	0.00	0.97	1.09	0.57	0.00	0.00	1.09	0.88
Avail Cap(c_a), veh/h				624	0	531	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.17	0.17	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	42.3	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				51.4	0.0	30.3	48.4	0.1	0.0	0.0	46.6	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				28.7	0.0	20.5	13.4	0.0	0.0	0.0	35.3	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				94.4	0.0	72.5	88.3	0.1	0.0	0.0	80.0	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1171			2453			3325	
Approach Delay, s/veh					84.8			13.4			73.1	
Approach LOS					F			B			E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	98.6	48.9	30.5	68.1
Change Period (Y+Rc), s	4.9	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	76.2	44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s	2.0	46.0	27.1	65.2
Green Ext Time (p_c), s	8.6	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1760	30	316	2490	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1760	30	316	2490	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	1853	32	333	2621	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2366	41	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5293	88	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1220	665	333	2621	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1837	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	13.0	13.1	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	848	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.78	0.78	1.13	0.62	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	848	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.58	0.58	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.2	3.2	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	2.4	4.3	64.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	2.0	2.6	13.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	5.5	7.5	108.1	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						1885			2954	
Approach Delay, s/veh		52.4						6.2			12.2	
Approach LOS		D						A			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.0	64.9		39.1		90.9
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	21.6	49.1		45.1		75.1
Max Q Clear Time (g_c+I1), s	23.6	15.1		30.9		2.0
Green Ext Time (p_c), s	0.0	5.8		1.1		14.5

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	316	20	226	0	386	0	440	226	90	320	0
Future Volume (veh/h)	300	316	20	226	0	386	0	440	226	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.84	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	340	22	243	0	415	0	473	243	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	508	494	32	0	0	0	0	815	413	384	1856	0
Arrive On Green	0.29	0.29	0.29	0.00	0.00	0.00	0.00	0.39	0.39	0.06	0.53	0.00
Sat Flow, veh/h	1767	1719	111		0		0	2208	1072	1767	3618	0
Grp Volume(v), veh/h	323	0	362		0.0		0	393	323	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1830				0	1763	1425	1767	1763	0
Q Serve(g_s), s	8.4	0.0	9.3				0.0	9.3	9.5	1.6	2.7	0.0
Cycle Q Clear(g_c), s	8.4	0.0	9.3				0.0	9.3	9.5	1.6	2.7	0.0
Prop In Lane	1.00		0.06				0.00		0.75	1.00		0.00
Lane Grp Cap(c), veh/h	508	0	526				0	679	549	384	1856	0
V/C Ratio(X)	0.64	0.00	0.69				0.00	0.58	0.59	0.25	0.19	0.00
Avail Cap(c_a), veh/h	775	0	803				0	807	652	470	2283	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	16.7				0.0	12.8	12.9	9.0	6.5	0.0
Incr Delay (d2), s/veh	1.3	0.0	1.6				0.0	3.6	4.6	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	3.6				0.0	3.8	3.2	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	18.3				0.0	16.4	17.4	9.1	6.8	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		685						716			441	
Approach Delay, s/veh		18.0						16.9			7.3	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.4	25.2		20.0		32.6
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	24.1		23.1		34.1
Max Q Clear Time (g_c+I1), s	3.6	11.5		11.3		4.7
Green Ext Time (p_c), s	0.0	8.0		2.6		6.4

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Year 2050B AM | Old Town Complex

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	300	140	216	310	20	140	1590	350	0	2080	490
Future Volume (veh/h)	220	300	140	216	310	20	140	1590	350	0	2080	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	183	385	147	191	376	21	147	1674	368	0	2189	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	392	823	314	220	432	24	140	2147	466	0	2205	
Arrive On Green	0.22	0.22	0.22	0.12	0.12	0.12	0.08	1.00	1.00	0.00	0.87	0.00
Sat Flow, veh/h	1767	3711	1417	1767	3474	193	3428	4147	900	0	5233	1572
Grp Volume(v), veh/h	183	385	147	191	200	197	147	1359	683	0	2189	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1417	1767	1856	1812	1714	1689	1670	0	1689	1572
Q Serve(g_s), s	11.7	11.7	11.7	13.8	13.8	13.9	5.3	0.0	0.0	0.0	53.5	0.0
Cycle Q Clear(g_c), s	11.7	11.7	11.7	13.8	13.8	13.9	5.3	0.0	0.0	0.0	53.5	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.54	0.00		1.00
Lane Grp Cap(c), veh/h	392	823	314	220	231	225	140	1748	864	0	2205	
V/C Ratio(X)	0.47	0.47	0.47	0.87	0.87	0.87	1.05	0.78	0.79	0.00	0.99	
Avail Cap(c_a), veh/h	489	1028	392	245	257	251	140	1748	864	0	2205	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	0.56	0.56	0.56	0.00	0.75	0.00
Uniform Delay (d), s/veh	43.9	43.9	43.9	55.9	55.9	55.9	59.7	0.0	0.0	0.0	8.2	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.4	21.2	20.1	21.6	71.2	2.0	4.2	0.0	15.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.4	4.2	7.5	7.7	7.7	3.6	0.5	1.0	0.0	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	44.1	44.3	77.1	76.0	77.6	130.9	2.0	4.2	0.0	23.2	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	C	
Approach Vol, veh/h		715			588			2189			2189	A
Approach Delay, s/veh		44.2			76.9			11.3			23.2	
Approach LOS		D			E			B			C	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	73.2	34.7	10.7	62.5	22.1
Change Period (Y+Rc), s	5.9	5.9	5.4	5.9	5.9
Max Green Setting (Gmax), s	58.3	36.0	5.3	47.6	18.0
Max Q Clear Time (g_c+I1), s	2.0	13.7	7.3	55.5	15.9
Green Ext Time (p_c), s	7.2	1.1	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050B AM | Old Town Complex

12: Rosecrans St & Midway Dr | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	300	160	150	410	210	200	1576	140	300	1686	170
Future Volume (veh/h)	300	300	160	150	410	210	200	1576	140	300	1686	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	312	312	167	156	427	219	208	1642	146	312	1756	177
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	700	300	171	659	278	258	1762	156	612	2241	225
Arrive On Green	0.10	0.20	0.20	0.10	0.19	0.19	0.08	0.37	0.37	0.36	0.96	0.96
Sat Flow, veh/h	3428	3526	1513	1767	3526	1486	3428	4725	419	3428	4667	469
Grp Volume(v), veh/h	312	312	167	156	427	219	208	1173	615	312	1269	664
Grp Sat Flow(s),veh/h/ln	1714	1763	1513	1767	1763	1486	1714	1689	1767	1714	1689	1758
Q Serve(g_s), s	11.7	10.1	12.9	11.4	14.6	18.3	7.8	43.4	43.5	9.3	7.8	8.0
Cycle Q Clear(g_c), s	11.7	10.1	12.9	11.4	14.6	18.3	7.8	43.4	43.5	9.3	7.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.27
Lane Grp Cap(c), veh/h	359	700	300	171	659	278	258	1260	659	612	1622	844
V/C Ratio(X)	0.87	0.45	0.56	0.91	0.65	0.79	0.81	0.93	0.93	0.51	0.78	0.79
Avail Cap(c_a), veh/h	359	881	378	171	854	360	282	1343	703	612	1622	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.61	0.61	0.61	0.22	0.22	0.22
Uniform Delay (d), s/veh	57.3	45.8	46.9	58.1	48.9	50.4	59.2	39.1	39.2	37.3	1.5	1.5
Incr Delay (d2), s/veh	19.2	0.2	0.6	43.2	0.4	6.3	8.4	9.1	15.4	0.1	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	4.5	4.9	7.1	6.5	7.3	3.7	19.2	21.3	3.5	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	46.0	47.5	101.3	49.3	56.7	67.6	48.2	54.6	37.4	2.4	3.2
LnGrp LOS	E	D	D	F	D	E	E	D	D	D	A	A
Approach Vol, veh/h		791			802			1996			2245	
Approach Delay, s/veh		58.4			61.4			52.2			7.5	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.9	53.4	17.0	30.7	14.2	68.1	18.5	29.2
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	11.3	45.5	13.4	14.9	9.8	10.0	13.7	20.3
Green Ext Time (p_c), s	0.1	3.0	0.0	0.8	0.0	6.3	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	340	10	666	360	120	10	1176	556	120	1636	230
Future Volume (veh/h)	390	340	10	666	360	120	10	1176	556	120	1636	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	398	347	10	680	367	122	10	1200	567	122	1669	235
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	394	11	612	409	334	21	2043	618	169	1555	666
Arrive On Green	0.17	0.22	0.22	0.18	0.22	0.22	0.01	0.40	0.40	0.10	0.88	0.88
Sat Flow, veh/h	1767	1792	52	3428	1856	1517	1767	5066	1534	3428	3526	1511
Grp Volume(v), veh/h	398	0	357	680	367	122	10	1200	567	122	1669	235
Grp Sat Flow(s),veh/h/ln	1767	0	1844	1714	1856	1517	1767	1689	1534	1714	1763	1511
Q Serve(g_s), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	24.1	45.5	4.5	57.3	1.9
Cycle Q Clear(g_c), s	22.6	0.0	24.4	23.2	25.0	7.5	0.7	24.1	45.5	4.5	57.3	1.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	405	612	409	334	21	2043	618	169	1555	666
V/C Ratio(X)	1.30	0.00	0.88	1.11	0.90	0.36	0.49	0.59	0.92	0.72	1.07	0.35
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	2043	618	232	1555	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	53.7	0.0	49.1	53.4	49.2	30.7	63.9	30.3	36.7	57.7	7.7	1.3
Incr Delay (d2), s/veh	155.0	0.0	14.3	68.6	14.0	0.2	6.4	1.2	20.7	1.9	40.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.2	0.0	12.8	15.8	13.2	2.8	0.4	9.9	20.3	1.9	11.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	208.7	0.0	63.3	122.0	63.2	30.9	70.3	31.6	57.4	59.6	48.3	2.1
LnGrp LOS	F	A	E	F	E	C	E	C	E	E	F	A
Approach Vol, veh/h		755			1169			1777			2026	
Approach Delay, s/veh		140.0			94.0			40.0			43.6	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	58.1	27.6	33.5	5.9	63.0	27.5	33.6
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	47.5	25.2	26.4	2.7	59.3	24.6	27.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary		
HCM 6th Ctrl Delay		65.5
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	806	210	650	986	90	180
Future Volume (veh/h)	806	210	650	986	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	848	221	684	1038	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	851	222	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2828	713	1767	3618	538	1071
Grp Volume(v), veh/h	546	523	684	1038	285	0
Grp Sat Flow(s),veh/h/ln	1763	1685	1767	1763	1615	0
Q Serve(g_s), s	27.8	27.9	28.5	12.3	15.2	0.0
Cycle Q Clear(g_c), s	27.8	27.9	28.5	12.3	15.2	0.0
Prop In Lane		0.42	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	525	560	2370	344	0
V/C Ratio(X)	1.00	1.00	1.22	0.44	0.83	0.00
Avail Cap(c_a), veh/h	549	525	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.9	30.9	30.7	6.8	33.8	0.0
Incr Delay (d2), s/veh	30.6	31.6	115.4	0.6	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	15.5	29.5	4.1	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	61.6	62.5	146.1	7.4	41.4	0.0
LnGrp LOS	E	E	F	A	D	A
Approach Vol, veh/h	1069			1722	285	
Approach Delay, s/veh	62.0			62.5	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.5	33.4				65.9		24.1
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	29.9				14.3		17.2
Green Ext Time (p_c), s	0.0	0.0				9.6		0.3

Intersection Summary		
HCM 6th Ctrl Delay		60.4
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	320	650	30	0	610
Future Vol, veh/h	0	320	650	30	0	610
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	368	747	34	0	701

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	411	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	587	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	576	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	576	-
HCM Lane V/C Ratio	-	-	0.639	-
HCM Control Delay (s)	-	-	21.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.5	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	996	1586	680	530	80
Future Volume (veh/h)	0	996	1586	680	530	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1016	1618	694	541	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1924	1924	1174	756	
Arrive On Green	0.00	0.55	0.55	0.55	0.22	0.00
Sat Flow, veh/h	0	3711	3618	1516	3428	1572
Grp Volume(v), veh/h	0	1016	1618	694	541	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1516	1714	1572
Q Serve(g_s), s	0.0	8.3	17.5	8.9	6.6	0.0
Cycle Q Clear(g_c), s	0.0	8.3	17.5	8.9	6.6	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1924	1924	1174	756	
V/C Ratio(X)	0.00	0.53	0.84	0.59	0.72	
Avail Cap(c_a), veh/h	0	1976	1976	1197	1816	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.6	8.6	2.3	16.3	0.0
Incr Delay (d2), s/veh	0.0	0.2	3.4	0.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	5.1	3.9	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.8	12.0	3.0	17.3	0.0
LnGrp LOS	A	A	B	A	B	
Approach Vol, veh/h		1016	2312		541	A
Approach Delay, s/veh		6.8	9.3		17.3	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.1		15.2		30.1
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		10.3		8.6		19.5
Green Ext Time (p_c), s		6.3		1.4		5.3
Intersection Summary						
HCM 6th Ctrl Delay			9.8			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	40	5	40	140	769	50	130	649	170
Future Volume (veh/h)	30	0	50	40	5	40	140	769	50	130	649	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	47	6	47	165	905	59	153	764	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	178	32	153	411	28	223	210	1797	117	195	1440	372
Arrive On Green	0.16	0.00	0.16	0.16	0.16	0.16	0.12	0.37	0.37	0.11	0.36	0.36
Sat Flow, veh/h	362	193	935	1314	174	1363	1767	4844	315	1767	3967	1025
Grp Volume(v), veh/h	94	0	0	47	0	53	165	630	334	153	649	315
Grp Sat Flow(s),veh/h/ln	1490	0	0	1314	0	1538	1767	1689	1782	1767	1689	1616
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.2	3.8	6.0	6.0	3.5	6.3	6.4
Cycle Q Clear(g_c), s	2.1	0.0	0.0	1.0	0.0	1.2	3.8	6.0	6.0	3.5	6.3	6.4
Prop In Lane	0.37		0.63	1.00		0.89	1.00		0.18	1.00		0.63
Lane Grp Cap(c), veh/h	363	0	0	411	0	251	210	1253	661	195	1226	586
V/C Ratio(X)	0.26	0.00	0.00	0.11	0.00	0.21	0.79	0.50	0.51	0.78	0.53	0.54
Avail Cap(c_a), veh/h	1234	0	0	1212	0	1188	286	1696	895	324	1761	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	14.9	0.0	15.0	17.7	10.1	10.1	17.9	10.4	10.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.2	6.6	0.4	0.8	2.6	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.3	0.0	0.4	1.7	1.8	1.9	1.4	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	0.0	0.0	14.9	0.0	15.2	24.3	10.5	10.9	20.5	10.8	11.3
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		94			100			1129			1117	
Approach Delay, s/veh		15.5			15.1			12.6			12.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	20.8		11.7	9.3	20.4		11.7
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.5	8.0		4.1	5.8	8.4		3.2
Green Ext Time (p_c), s	0.0	6.4		0.3	0.0	6.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	52.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	373	613	939	659	20
Future Vol, veh/h	0	373	613	939	659	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	414	681	1043	732	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	397	764	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	513	~ 505	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	503	~ 500	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.5	78.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 500	-	503	-	-
HCM Lane V/C Ratio	1.362	-	0.824	-	-
HCM Control Delay (s)	198.8	-	37.5	-	-
HCM Lane LOS	F	-	E	-	-
HCM 95th %tile Q(veh)	30.9	-	8.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Year 2050B AM — Old Town Complex

19: Pacific Hwy & Sports Arena Blvd

08/13/2020

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	120	0	1723	1103	130
Future Vol, veh/h	0	120	0	1723	1103	130
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	138	0	1980	1268	149

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	729	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	363	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	356	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	356	-	-
HCM Lane V/C Ratio	-	0.387	-	-
HCM Control Delay (s)	-	21.4	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.8	-	-

Year 2050B AM — Old Town Complex

20: Pacific Hwy & Enterprise St

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	20	30	20	30	10	420	1677	260	120	897	206
Future Volume (veh/h)	36	20	30	20	30	10	420	1677	260	120	897	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.69	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	40	22	33	22	33	11	467	1863	289	133	997	229
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	51	642	544	31	621	364	276	1272	527	141	825	189
Arrive On Green	0.03	0.35	0.35	0.02	0.33	0.33	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1089	1767	3526	1461	1767	2818	645
Grp Volume(v), veh/h	40	22	33	22	33	11	467	1863	289	133	622	604
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1089	1767	1763	1461	1767	1763	1700
Q Serve(g_s), s	2.7	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.8	8.9	34.9	34.9
Cycle Q Clear(g_c), s	2.7	0.9	1.7	1.5	1.4	0.8	18.6	43.0	18.8	8.9	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	51	642	544	31	621	364	276	1272	527	141	516	498
V/C Ratio(X)	0.79	0.03	0.06	0.72	0.05	0.03	1.69	1.46	0.55	0.94	1.21	1.21
Avail Cap(c_a), veh/h	76	642	544	86	623	366	276	1272	527	141	516	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	25.8	26.0	58.3	26.9	26.7	50.3	38.1	30.4	54.6	42.2	42.2
Incr Delay (d2), s/veh	14.9	0.0	0.0	11.0	0.0	0.0	327.3	213.6	1.4	58.4	109.9	113.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.4	0.6	0.8	0.6	0.2	33.3	55.9	6.8	6.3	30.7	30.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	25.8	26.1	69.3	26.9	26.7	377.6	251.7	31.8	113.0	152.0	155.3
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	F	F
Approach Vol, veh/h		95			66			2619			1359	
Approach Delay, s/veh		45.5			41.0			249.9			149.7	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.7	6.5	46.1	23.0	43.6	7.8	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.9	45.0	3.5	3.7	20.6	36.9	4.7	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	208.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	550.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1510	2080	2357	817	130
Future Vol, veh/h	0	1510	2080	2357	817	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1641	2261	2562	888	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	464	1039	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 542	~ 659	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 532	~ 653	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 960	$ 528	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 653	-	532	-	-
HCM Lane V/C Ratio	3.462	-	3.085	-	-
HCM Control Delay (s)	$ 1126.2	-	$ 960	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	205.1	-	143	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	150	430	300	10	390	110	270	5	50	10
Future Volume (veh/h)	5	80	150	430	300	10	390	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	195	558	390	13	506	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	221	415	398	716	24	410	90	222	85	634	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	551	1033	1057	1781	59	735	208	510	48	1459	276
Grp Volume(v), veh/h	6	0	299	558	0	403	1000	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1585	1057	0	1841	1453	0	0	1783	0	0
Q Serve(g_s), s	0.3	0.0	8.3	15.8	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	8.3	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.51		0.35	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	636	398	0	739	723	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.47	1.40	0.00	0.55	1.38	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	636	398	0	739	723	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.2	24.5	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.9	196.1	0.0	0.9	181.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8	27.1	0.0	3.8	45.7	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.1	220.6	0.0	14.6	199.7	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		305			961			1000			84	
Approach Delay, s/veh		14.2			134.3			199.7			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		31.0		29.0		31.0
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9
Max Green Setting (Gmax), s		24.1		26.1		24.1		26.1
Max Q Clear Time (g_c+I1), s		12.3		3.7		26.1		28.1
Green Ext Time (p_c), s		2.2		0.3		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	142.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	222	480	50	0	310	390
Future Volume (veh/h)	0	0	20	40	390	370	222	480	50	0	310	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	274	593	62	0	383	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	93	34	2	0	325	408
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	78	6	0	734	922
Grp Volume(v), veh/h	0	0	25	987	0	0	929	0	0	0	0	864
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	84	0	0	0	0	1657
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.29		0.07	0.00		0.56
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	130	0	0	0	0	732
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	7.14	0.00	0.00	0.00	0.00	1.18
Avail Cap(c_a), veh/h	0	0	569	676	0	0	130	0	0	0	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	18.9	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	2777.1	0.0	0.0	0.0	0.0	94.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	101.9	0.0	0.0	0.0	0.0	25.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	2796.0	0.0	0.0	0.0	0.0	108.7
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			929			864	
Approach Delay, s/veh		10.4			232.0			2796.0			108.7	
Approach LOS		B			F			F			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0		23.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		22.1		18.1		22.1		18.1				
Max Q Clear Time (g_c+I1), s		24.1		2.5		24.1		20.1				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			1041.2									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	154.4
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	912	0	232	90	0
Future Vol, veh/h	450	912	0	232	90	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1086	0	276	107	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	187.7	14.4	11.1
HCM LOS	F	B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	450	912	90
LT Vol	0	450	0	0
Through Vol	232	0	0	90
RT Vol	0	0	912	0
Lane Flow Rate	276	536	1086	107
Geometry Grp	2	7	7	2
Degree of Util (X)	0.459	0.932	1.523	0.19
Departure Headway (Hd)	6.216	6.261	5.049	6.567
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	583	584	727	550
Service Time	4.216	3.971	2.758	4.567
HCM Lane V/C Ratio	0.473	0.918	1.494	0.195
HCM Control Delay	14.4	47.2	257	11.1
HCM Lane LOS	B	E	F	B
HCM 95th-tile Q	2.4	11.9	54.1	0.7

Intersection	
Intersection Delay, s/veh	54.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	712	20	50	5	162	5	120	5	5	5
Future Vol, veh/h	5	300	712	20	50	5	162	5	120	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	809	23	57	6	184	6	136	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	69.6	10.4	15.8	10.1
HCM LOS	F	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	56%	2%	0%	27%	33%
Vol Thru, %	2%	98%	0%	67%	33%
Vol Right, %	42%	0%	100%	7%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	287	305	712	75	15
LT Vol	162	5	0	20	5
Through Vol	5	300	0	50	5
RT Vol	120	0	712	5	5
Lane Flow Rate	326	347	809	85	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.533	0.549	1.122	0.144	0.031
Departure Headway (Hd)	6.081	5.706	4.991	6.32	6.85
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	597	627	720	571	526
Service Time	4.081	3.497	2.781	4.32	4.85
HCM Lane V/C Ratio	0.546	0.553	1.124	0.149	0.032
HCM Control Delay	15.8	15.3	92.8	10.4	10.1
HCM Lane LOS	C	C	F	B	B
HCM 95th-tile Q	3.1	3.3	23.5	0.5	0.1

Intersection	
Intersection Delay, s/veh	36.4
Intersection LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	192	230	507
Future Vol, veh/h	95	100	80	192	230	507
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	200	240	528
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.3	13.1	51.7
HCM LOS	B	B	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	29%	100%	0%	0%
Vol Thru, %	71%	0%	0%	31%
Vol Right, %	0%	0%	100%	69%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	95	100	737
LT Vol	80	95	0	0
Through Vol	192	0	0	230
RT Vol	0	0	100	507
Lane Flow Rate	283	99	104	768
Geometry Grp	2	7	7	2
Degree of Util (X)	0.443	0.207	0.182	0.993
Departure Headway (Hd)	5.632	7.523	6.297	4.658
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	638	476	568	783
Service Time	3.681	5.281	4.054	2.658
HCM Lane V/C Ratio	0.444	0.208	0.183	0.981
HCM Control Delay	13.1	12.2	10.5	51.7
HCM Lane LOS	B	B	B	F
HCM 95th-tile Q	2.3	0.8	0.7	16.6

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	192	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	0	192	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	0	216	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	9.5	8.6	12.4
HCM LOS	-	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	5%	9%
Vol Thru, %	100%	0%	100%	0%	91%
Vol Right, %	0%	100%	0%	95%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	202	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	0	300
RT Vol	0	40	0	192	0
Lane Flow Rate	90	45	0	227	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.135	0.059	0	0.289	0.491
Departure Headway (Hd)	5.424	4.717	5.475	4.585	4.765
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	657	753	0	781	753
Service Time	3.192	2.485	3.558	2.634	2.821
HCM Lane V/C Ratio	0.137	0.06	0	0.291	0.493
HCM Control Delay	9	7.8	8.6	9.5	12.4
HCM Lane LOS	A	A	N	A	B
HCM 95th-tile Q	0.5	0.2	0	1.2	2.7

Intersection	
Intersection Delay, s/veh	38.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	0
Future Vol, veh/h	160	180	150	0	0	0	90	60	160	320	170	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	167	188	156	0	0	0	94	63	167	333	177	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	42.9	18.5	47.7
HCM LOS	E	C	E

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	33%	65%
Vol Thru, %	19%	37%	35%
Vol Right, %	52%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	490	490
LT Vol	90	160	320
Through Vol	60	180	170
RT Vol	160	150	0
Lane Flow Rate	323	510	510
Geometry Grp	1	1	1
Degree of Util (X)	0.586	0.902	0.925
Departure Headway (Hd)	6.536	6.363	6.524
Convergence, Y/N	Yes	Yes	Yes
Cap	549	567	556
Service Time	4.599	4.412	4.579
HCM Lane V/C Ratio	0.588	0.899	0.917
HCM Control Delay	18.5	42.9	47.7
HCM Lane LOS	C	E	E
HCM 95th-tile Q	3.7	10.8	11.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	820	0	0	890	680
Future Volume (veh/h)	0	0	0	200	370	80	300	820	0	0	890	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	863	0	0	937	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	863	0	0	937	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	17.0	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	17.0	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.36	0.00	0.00	0.60	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.77	0.77	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	17.8	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.5	0.3	0.0	0.0	1.7	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	6.8	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.3	0.0	0.0	19.6	74.2
LnGrp LOS				C	C	C	C	A	A	A	B	F
Approach Vol, veh/h					684			1179			1653	
Approach Delay, s/veh					31.5			6.8			43.2	
Approach LOS					C			A			D	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	62.0	20.0	42.0	22.0
Change Period (Y+Rc), s	4.9	4.9	* 4.9	4.9
Max Green Setting (Gmax), s	48.1	6.6	* 37	26.1
Max Q Clear Time (g_c+I1), s	2.0	8.1	39.1	12.9
Green Ext Time (p_c), s	9.3	0.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	520	160	460	630	0
Future Volume (veh/h)	600	380	240	0	0	0	0	520	160	460	630	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	536	165	474	649	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	536	165	474	649	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	11.7	7.8	11.3	9.5	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	11.7	7.8	11.3	9.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.47	0.33	0.85	0.37	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.96	0.96	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	18.4	17.2	34.2	7.9	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	1.3	1.7	6.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	3.9	2.3	5.1	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	19.7	18.9	40.5	8.4	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		1258						701			1123	
Approach Delay, s/veh		31.3						19.5			22.0	
Approach LOS		C						B			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	18.1	38.9	27.0	57.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.6	26.1	27.1	47.1
Max Q Clear Time (g_c+I1), s	13.3	13.7	18.6	11.5
Green Ext Time (p_c), s	0.4	3.9	2.5	5.7

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

31: Washington St & Pacific Hwy (N)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	480	0	0	720	150
Future Volume (veh/h)	30	0	70	60	50	170	140	480	0	0	720	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	500	0	0	750	156
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	288	176	1497	0	0	1028	445
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.36	0.36
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	500	0	0	750	156
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.9	0.0	0.0	15.7	6.3
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.4	5.5	6.9	0.0	0.0	15.7	6.3
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	288	176	1497	0	0	1028	445
V/C Ratio(X)	1.10	0.00	0.00	0.18	0.14	0.61	0.83	0.33	0.00	0.00	0.73	0.35
Avail Cap(c_a), veh/h	94	0	0	675	708	567	176	1890	0	0	1405	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	0.0	0.0	22.9	22.8	25.1	30.1	9.1	0.0	0.0	18.7	15.8
Incr Delay (d2), s/veh	123.9	0.0	0.0	0.1	0.1	0.8	27.0	0.0	0.0	0.0	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	0.8	0.7	2.6	3.6	1.8	0.0	0.0	4.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	156.0	0.0	0.0	23.0	22.8	25.9	57.1	9.2	0.0	0.0	20.2	16.3
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			646			906	
Approach Delay, s/veh		156.0			24.8			20.0			19.5	
Approach LOS		F			C			C			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		40.5		8.0	11.3	29.2		19.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0
Max Q Clear Time (g_c+I1), s		8.9		6.0	7.5	17.7		9.4
Green Ext Time (p_c), s		2.4		0.0	0.0	6.2		0.9

Intersection Summary		
HCM 6th Ctrl Delay		27.8
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

32: Washington St & Pacific Hwy (S)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	240	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	167	207	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	478	502	742				0	651	86	289	551	0
Arrive On Green	0.27	0.27	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	1767	1856	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	167	207	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	3.1	3.7	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	3.1	3.7	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	478	502	742				0	369	367	289	551	0
V/C Ratio(X)	0.35	0.41	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	1273	1336	1427				0	607	603	313	598	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.9	12.2	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.0				0.0	0.7	0.7	6.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.3	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	12.4	5.9				0.0	15.4	15.5	22.2	16.4	0.0
LnGrp LOS	B	B	A				A	B	B	C	B	A
Approach Vol, veh/h		463						478			489	
Approach Delay, s/veh		11.0						15.4			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.3		7.2
Max Q Clear Time (g_c+I1), s				7.1		5.7		6.3
Green Ext Time (p_c), s				1.1		1.1		0.3

Intersection Summary		
HCM 6th Ctrl Delay		15.2
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	140	250	445	100	80	455	140
Future Volume (veh/h)	90	200	100	410	700	140	250	445	100	80	455	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	161	287	511	115	92	523	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	544	542	188	527	105	129	954	208	111	899	267
Arrive On Green	0.06	0.35	0.35	0.13	0.43	0.43	0.07	0.23	0.23	0.08	0.23	0.23
Sat Flow, veh/h	1767	1537	1531	1464	1238	248	1767	4112	895	1464	3829	1136
Grp Volume(v), veh/h	103	230	115	471	0	966	287	417	209	92	459	225
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1485	1767	1689	1631	1464	1689	1588
Q Serve(g_s), s	5.1	10.3	4.7	11.6	0.0	38.5	6.6	9.8	10.2	5.6	10.9	11.4
Cycle Q Clear(g_c), s	5.1	10.3	4.7	11.6	0.0	38.5	6.6	9.8	10.2	5.6	10.9	11.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.55	1.00		0.72
Lane Grp Cap(c), veh/h	100	544	542	188	0	632	129	783	378	111	793	373
V/C Ratio(X)	1.03	0.42	0.21	2.51	0.00	1.53	2.23	0.53	0.55	0.83	0.58	0.60
Avail Cap(c_a), veh/h	100	544	542	188	0	632	129	1094	528	131	1150	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	22.2	20.4	39.4	0.0	26.0	41.9	30.4	30.6	41.2	30.6	30.8
Incr Delay (d2), s/veh	99.5	0.2	0.1	694.2	0.0	245.3	575.6	1.0	2.4	26.4	1.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.6	1.7	40.3	0.0	55.8	23.5	4.0	4.2	2.8	4.5	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	142.1	22.4	20.5	733.6	0.0	271.3	617.5	31.5	33.0	67.6	31.8	33.6
LnGrp LOS	F	C	C	F	A	F	F	C	C	E	C	C
Approach Vol, veh/h		448			1437			913			776	
Approach Delay, s/veh		49.4			422.8			216.0			36.6	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	26.3	16.0	36.9	11.0	26.5	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	7.6	12.2	13.6	12.3	8.6	13.4	7.1	40.5
Green Ext Time (p_c), s	0.0	6.1	0.0	1.0	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	239.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	533	1140	100	80	1410	100	250	392	90	110	282	903
Future Volume (veh/h)	533	1140	100	80	1410	100	250	392	90	110	282	903
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	544	1163	102	82	1439	102	255	400	92	112	288	921
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1088	77	134	991	219	134	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.24	0.24	0.08	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3333	235	1767	4121	911	1767	5066	1520
Grp Volume(v), veh/h	544	626	639	82	758	783	255	325	167	112	288	921
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1805	1767	1689	1655	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	11.3	11.9	8.8	6.4	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	11.3	11.9	8.8	6.4	33.7
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	589	134	812	398	134	1219	710
V/C Ratio(X)	1.41	0.73	0.73	0.80	1.32	1.33	1.91	0.40	0.42	0.83	0.24	1.30
Avail Cap(c_a), veh/h	386	859	875	121	575	589	134	812	398	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	44.7	44.9	63.8	42.8	38.1
Incr Delay (d2), s/veh	198.6	3.5	3.5	23.2	154.6	159.6	434.2	1.5	3.2	19.2	0.5	144.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.9	17.4	17.8	3.6	44.6	46.5	20.9	5.0	5.3	4.7	2.8	52.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	253.3	32.0	32.0	88.4	201.7	206.7	498.9	46.2	48.2	83.0	43.2	182.4
LnGrp LOS	F	C	C	F	F	F	F	D	D	F	D	F
Approach Vol, veh/h		1809			1623			747			1321	
Approach Delay, s/veh		98.6			198.4			201.2			143.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	39.0	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.8	13.9	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.5	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1403	2530	2930	80	60	100
Future Volume (veh/h)	1403	2530	2930	80	60	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1509	2720	3151	0	65	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4179	2758		152	135
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1509	2720	3151	0	65	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	4.1	8.0
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	4.1	8.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4179	2758		152	135
V/C Ratio(X)	1.81	0.65	1.14		0.43	0.80
Avail Cap(c_a), veh/h	834	4179	2758		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.2	52.9
Incr Delay (d2), s/veh	369.1	0.8	69.0	0.0	0.7	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	54.8	5.9	41.9	0.0	1.9	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	413.8	4.7	95.9	0.0	51.9	56.9
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4229	3151	A	173	
Approach Delay, s/veh		150.7	95.9		55.0	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		10.0	30.7	66.2
Green Ext Time (p_c), s		51.1		0.2	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		125.6
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	70	120	110	150	120	260	1180	93	203	790	240
Future Volume (veh/h)	90	70	120	110	150	120	260	1180	93	203	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	73	125	115	156	125	271	1229	97	211	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	160	237	190	97	252	200	364	1338	105	254	1558	768
Arrive On Green	0.05	0.13	0.13	0.05	0.14	0.14	0.11	0.40	0.40	0.14	0.44	0.44
Sat Flow, veh/h	3428	1856	1485	1767	1856	1468	3428	3304	260	1767	3526	1570
Grp Volume(v), veh/h	94	73	125	115	156	125	271	654	672	211	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1485	1767	1856	1468	1714	1763	1802	1767	1763	1570
Q Serve(g_s), s	2.0	2.6	5.8	4.0	5.8	5.9	5.6	25.6	25.8	8.5	12.4	7.1
Cycle Q Clear(g_c), s	2.0	2.6	5.8	4.0	5.8	5.9	5.6	25.6	25.8	8.5	12.4	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	160	237	190	97	252	200	364	714	729	254	1558	768
V/C Ratio(X)	0.59	0.31	0.66	1.19	0.62	0.63	0.74	0.92	0.92	0.83	0.53	0.33
Avail Cap(c_a), veh/h	226	790	632	97	759	600	522	721	737	388	1684	824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	28.8	30.3	34.4	29.7	29.7	31.6	20.5	20.6	30.3	14.8	11.3
Incr Delay (d2), s/veh	1.3	0.7	3.9	149.5	0.9	1.2	1.6	16.9	17.1	5.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	2.1	5.6	2.4	2.0	2.3	12.4	12.8	3.7	4.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	29.6	34.1	183.9	30.6	30.9	33.2	37.5	37.7	35.6	15.2	11.7
LnGrp LOS	D	C	C	F	C	C	C	D	D	D	B	B
Approach Vol, veh/h		292			396			1597			1284	
Approach Delay, s/veh		33.4			75.2			36.8			17.9	
Approach LOS		C			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	34.8	8.4	14.8	12.1	37.5	7.8	15.4
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	10.5	27.8	6.0	7.8	7.6	14.4	4.0	7.9
Green Ext Time (p_c), s	0.1	1.7	0.0	0.8	0.2	9.3	0.0	0.7

Intersection Summary			
HCM 6th Ctrl Delay			34.0
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B AM | Old Town Complex

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑					↰		↱
Traffic Volume (veh/h)	0	1303	100	370	410	0	0	0	0	190	0	823
Future Volume (veh/h)	0	1303	100	370	410	0	0	0	0	190	0	823
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1416	109	402	446	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1416	109	402	446	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	27.8	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.8	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.61	0.11	1.19	0.16	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.23	0.23	0.69	0.69	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.0	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	105.4	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.8	1.0	9.4	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.3	7.8	153.6	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1525			848						207	A
Approach Delay, s/veh		11.9			72.8						55.5	
Approach LOS		B			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0
Max Q Clear Time (g_c+I1), s	13.8	29.8		15.8		2.0
Green Ext Time (p_c), s	0.0	5.7		0.1		2.0

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050B AM | Old Town Complex

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↱			↰↑	↱			
Traffic Volume (veh/h)	943	550	0	0	480	310	300	10	440	0	0	0
Future Volume (veh/h)	943	550	0	0	480	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	982	573	0	0	500	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1213	2365	0	0	547	352	420	13	385			
Arrive On Green	0.59	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2109	1298	1715	55	1572			
Grp Volume(v), veh/h	982	573	0	0	437	386	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1552	1770	0	1572			
Q Serve(g_s), s	27.0	0.0	0.0	0.0	28.8	29.0	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	27.0	0.0	0.0	0.0	28.8	29.0	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.84	0.97		1.00			
Lane Grp Cap(c), veh/h	1213	2365	0	0	478	421	434	0	385			
V/C Ratio(X)	0.81	0.24	0.00	0.00	0.91	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1213	2365	0	0	521	459	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.4	0.0	0.0	0.0	42.4	42.4	41.8	0.0	45.3			
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	24.5	27.3	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.0	0.0	15.6	14.1	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	0.0	0.0	0.0	66.8	69.8	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1555			823			780				
Approach Delay, s/veh		13.8			68.2			109.8				
Approach LOS		B			E			F				

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		34.0	47.9	38.1
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36
Max Q Clear Time (g_c+I1), s		2.0		31.4	29.0	31.0
Green Ext Time (p_c), s		2.7		0.0	3.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	730	10	1090	1010	0	400
Future Volume (veh/h)	730	10	1090	1010	0	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	795	0	1172	0	0	430
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	929	423	1689		0	1689
Arrive On Green	0.26	0.00	0.48	0.00	0.00	0.48
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	795	0	1172	0	0	430
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	11.8	0.0	14.3	0.0	0.0	4.0
Cycle Q Clear(g_c), s	11.8	0.0	14.3	0.0	0.0	4.0
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	929	423	1689		0	1689
V/C Ratio(X)	0.86	0.00	0.69		0.00	0.25
Avail Cap(c_a), veh/h	983	448	1689		0	1689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	11.2	0.0	0.0	8.5
Incr Delay (d2), s/veh	7.4	0.0	2.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	5.0	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	0.0	13.6	0.0	0.0	8.9
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	795		1172	A		430
Approach Delay, s/veh	26.7		13.6			8.9
Approach LOS	C		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	31.8	31.8	23.2
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	25.5	* 26	15.3
Max Q Clear Time (g_c+I1), s	16.3	6.0	13.8
Green Ext Time (p_c), s	6.3	4.5	0.7

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	625
Future Volume (vph)	290	560	120	90	270	625
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	694

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	694
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	694
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.62
Capacity (veh/h)	552	608	598	547	1118
Control Delay (s)	16.9	68.7	12.4	16.8	11.2
Approach Delay (s)	51.0		12.4	12.9	
Approach LOS	F		B	B	

Intersection Summary			
Delay	29.4		
Level of Service	D		
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	755	560	485	260	290	40
Future Volume (veh/h)	755	560	485	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	812	602	522	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	839	1358	730		407	933
Arrive On Green	0.47	0.73	0.21	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	812	602	522	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	37.4	10.8	11.5	0.0	7.4	1.0
Cycle Q Clear(g_c), s	37.4	10.8	11.5	0.0	7.4	1.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	839	1358	730		407	933
V/C Ratio(X)	0.97	0.44	0.72		0.77	0.05
Avail Cap(c_a), veh/h	861	1674	1285		901	1160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	4.5	30.9	0.0	35.8	7.1
Incr Delay (d2), s/veh	22.6	0.1	0.5	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	3.0	4.8	0.0	3.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.0	4.5	31.4	0.0	36.9	7.1
LnGrp LOS	D	A	C		D	A
Approach Vol, veh/h		1414	522	A	355	
Approach Delay, s/veh		27.2	31.4		33.3	
Approach LOS		C	C		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.3		16.4	43.9	23.3
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		12.8		9.4	39.4	13.5
Green Ext Time (p_c), s		2.8		0.6	0.3	2.2

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	440	0	0	20	650	1005	5	10	385	100
Future Volume (veh/h)	330	30	440	0	0	20	650	1005	5	10	385	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	489				722	1117	6	11	428	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	792	0	959				1366	2168	12	19	574	147
Arrive On Green	0.22	0.00	0.22				0.80	1.00	1.00	0.01	0.21	0.21
Sat Flow, veh/h	3534	0	1485				3428	3595	19	1767	2738	701
Grp Volume(v), veh/h	391	0	489				722	548	575	11	274	265
Grp Sat Flow(s),veh/h/ln	1767	0	1485				1714	1763	1851	1767	1763	1676
Q Serve(g_s), s	8.7	0.0	0.0				6.7	0.0	0.0	0.6	13.1	13.4
Cycle Q Clear(g_c), s	8.7	0.0	0.0				6.7	0.0	0.0	0.6	13.1	13.4
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.42
Lane Grp Cap(c), veh/h	792	0	959				1366	1063	1116	19	370	351
V/C Ratio(X)	0.49	0.00	0.51				0.53	0.52	0.52	0.58	0.74	0.75
Avail Cap(c_a), veh/h	1178	0	1122				1366	1063	1116	100	460	438
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.38	0.38	0.38	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	9.3				6.2	0.0	0.0	44.3	33.3	33.4
Incr Delay (d2), s/veh	0.8	0.0	0.7				0.1	0.7	0.6	10.1	12.5	14.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	12.4				1.6	0.2	0.2	0.3	6.8	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	10.0				6.2	0.7	0.6	54.4	45.8	47.4
LnGrp LOS	C	A	A				A	A	A	D	D	D
Approach Vol, veh/h		880						1845			550	
Approach Delay, s/veh		19.4						2.8			46.7	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.4	59.2		25.5	40.8	23.8
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.7	8.7	15.4
Green Ext Time (p_c), s	0.0	10.8		6.1	1.3	2.6

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	90	10	310	10	1315	110	270	565	20
Future Volume (veh/h)	20	10	10	90	10	310	10	1315	110	270	565	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	94	10	323	10	1370	115	281	589	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	184	87	68	133	28	348	17	1472	124	384	1817	65
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.01	0.31	0.31	0.22	0.52	0.52
Sat Flow, veh/h	401	282	220	274	90	1129	1767	4730	397	1767	3466	123
Grp Volume(v), veh/h	41	0	0	427	0	0	10	978	507	281	299	311
Grp Sat Flow(s),veh/h/ln	903	0	0	1493	0	0	1767	1689	1750	1767	1763	1827
Q Serve(g_s), s	0.0	0.0	0.0	20.6	0.0	0.0	0.5	25.3	25.3	13.3	8.8	8.8
Cycle Q Clear(g_c), s	1.5	0.0	0.0	24.9	0.0	0.0	0.5	25.3	25.3	13.3	8.8	8.8
Prop In Lane	0.51		0.24	0.22		0.76	1.00		0.23	1.00		0.07
Lane Grp Cap(c), veh/h	339	0	0	509	0	0	17	1051	545	384	924	958
V/C Ratio(X)	0.12	0.00	0.00	0.84	0.00	0.00	0.58	0.93	0.93	0.73	0.32	0.32
Avail Cap(c_a), veh/h	372	0	0	548	0	0	102	1054	546	384	924	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.50	0.50	0.50	0.85	0.85	0.85
Uniform Delay (d), s/veh	22.1	0.0	0.0	30.0	0.0	0.0	44.4	30.1	30.1	32.8	12.3	12.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	9.7	0.0	0.0	5.5	9.0	15.0	5.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	10.0	0.0	0.0	0.2	11.2	12.5	6.1	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	0.0	39.8	0.0	0.0	49.9	39.0	45.1	38.0	13.1	13.0
LnGrp LOS	C	A	A	D	A	A	D	D	D	D	B	B
Approach Vol, veh/h		41			427			1495			891	
Approach Delay, s/veh		22.1			39.8			41.1			20.9	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.5	32.9		32.6	5.3	52.1		32.6
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.3	27.3		3.5	2.5	10.8		26.9
Green Ext Time (p_c), s	0.1	0.7		0.1	0.0	5.5		0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B PM
5: Congress St & Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1105	190	200	515	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1105	190	200	515	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.85	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1151	198	208	536	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1347	232	164	1582	0	470	0	412	0	497	0
Arrive On Green	0.00	0.40	0.40	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3461	572	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	919	430	208	536	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1243	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	19.0	19.0	5.6	6.2	0.0	9.4	0.0	12.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	19.0	19.0	5.6	6.2	0.0	9.4	0.0	12.8	0.0	0.0	0.0
Prop In Lane	0.00		0.46	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1076	503	164	1582	0	470	0	412	0	497	0
V/C Ratio(X)	0.00	0.85	0.85	1.27	0.34	0.00	0.49	0.00	0.83	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1103	516	164	1611	0	771	0	765	0	951	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.4	16.4	27.4	6.9	0.0	19.6	0.0	20.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.5	13.0	161.1	0.0	0.0	0.3	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	6.5	9.5	1.5	0.0	2.6	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.9	29.3	188.6	7.0	0.0	19.9	0.0	22.6	0.0	0.0	0.0
LnGrp LOS	A	C	C	F	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1349			744			573			0	
Approach Delay, s/veh		25.0			57.7			21.5			0.0	
Approach LOS		C			E			C				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	29.4	21.1	39.4	21.1
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	7.6	21.0	0.0	8.2	14.8
Green Ext Time (p_c), s	0.0	2.9	0.0	2.5	1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B PM
6: Pacific Hwy & Rosecrans St/Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	640	190	345	390	100	260	422	615	200	372	200
Future Volume (veh/h)	140	640	190	345	390	100	260	422	615	200	372	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	149	681	202	367	415	106	277	449	654	213	396	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	149	681	202	367	415	106	277	449	654	213	396	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	10.8	30.4	16.1	17.3	34.9	9.1	14.8	13.5	36.8	16.0	11.6	16.1
Cycle Q Clear(g_c), s	10.8	30.4	16.1	17.3	34.9	9.1	14.8	13.5	36.8	16.0	11.6	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	0.93	0.88	0.40	1.02	0.89	0.29	1.37	0.45	1.33	1.24	0.38	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	44.7	28.8	56.1	41.8	33.0	57.3	38.0	38.2	56.7	36.4	38.0
Incr Delay (d2), s/veh	48.7	11.6	0.6	51.9	17.5	0.2	195.3	0.3	163.6	147.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	11.7	4.7	8.5	14.8	2.5	17.6	5.9	37.6	12.5	4.9	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.1	56.4	29.4	108.0	59.2	33.2	252.6	38.3	201.7	203.9	36.5	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1032			888			1380			822	
Approach Delay, s/veh		58.4			76.3			158.8			80.4	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	32.4	16.8	18.1	12.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	1.9	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	100.3
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	70.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	940	610	290
Future Vol, veh/h	120	70	200	940	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1011	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1768	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 82	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 55	357	691	-	-	-
Mov Cap-2 Maneuver	~ 55	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 816.6	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	80	-	-
HCM Lane V/C Ratio	0.311	-	2.554	-	-
HCM Control Delay (s)	12.5	-	$ 816.6	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	435	370	2340	0	0	2505	470
Future Volume (veh/h)	0	0	0	140	660	435	370	2340	0	0	2505	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	524	446	2819	0	0	3018	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				104	492	338	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				377	1789	1230	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				824	0	664	446	2819	0	0	3018	566
Grp Sat Flow(s),veh/h/ln				1837	0	1558	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.21		0.79	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	429	150	3362	0	0	2792	836
V/C Ratio(X)				1.63	0.00	1.55	2.97	0.84	0.00	0.00	1.08	0.68
Avail Cap(c_a), veh/h				505	0	429	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.20	0.20	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				292.9	0.0	258.6	889.7	0.6	0.0	0.0	43.6	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				61.5	0.0	48.1	42.7	0.2	0.0	0.0	46.2	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				350.9	0.0	316.6	956.1	0.6	0.0	0.0	79.5	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1488			3265			3584	
Approach Delay, s/veh					335.6			131.1			71.7	
Approach LOS					F			F			E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2
Green Ext Time (p_c), s		18.0		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	142.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2280	40	295	2230	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2280	40	295	2230	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2351	41	304	2299	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2623	46	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5292	89	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1547	845	304	2299	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1837	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	66.0	66.5	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	66.0	66.5	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	940	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.89	0.90	1.64	0.56	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	940	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	35.2	35.3	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	0.8	1.5	289.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	26.7	29.5	21.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	36.0	36.8	352.7	0.0	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2392			2603	
Approach Delay, s/veh		91.1						36.2			41.2	
Approach LOS		F						D			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.2	86.8		52.0		108.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.8	81.9		47.1		103.1
Max Q Clear Time (g_c+I1), s	18.8	68.5		49.1		2.0
Green Ext Time (p_c), s	0.0	6.4		0.0		10.6

Intersection Summary	
HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	475	30	395	0	305	0	860	325	120	670	0
Future Volume (veh/h)	210	475	30	395	0	305	0	860	325	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	500	32	416	0	321	0	905	342	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	387	25	0	0	0	0	1557	582	300	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1714	110		0		0	2488	896	1767	3618	0
Grp Volume(v), veh/h	221	0	532		0.0		0	663	584	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1823				0	1763	1529	1767	1763	
Q Serve(g_s), s	17.7	0.0	36.1				0.0	33.8	34.6	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	33.8	34.6	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.59	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	994	300	2514	0
V/C Ratio(X)	0.55	0.00	1.29				0.00	0.58	0.59	0.42	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	994	315	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	15.7	15.9	13.7	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	133.6				0.0	0.2	0.2	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	32.0				0.0	13.6	12.0	1.5	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	195.6				0.0	15.9	16.1	14.0	8.5	0.0
LnGrp LOS	D	A	F				A	B	B	B	A	A
Approach Vol, veh/h		753						1247			831	
Approach Delay, s/veh		154.3						16.0			9.3	
Approach LOS		F						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.1	108.9		41.0		119.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	7.1	65.6		36.1		77.1
Max Q Clear Time (g_c+I1), s	5.7	36.6		38.1		13.5
Green Ext Time (p_c), s	0.0	23.6		0.0		19.1

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	530	230	395	530	30	280	1750	510	0	1690	770
Future Volume (veh/h)	570	530	230	395	530	30	280	1750	510	0	1690	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	668	509	250	346	692	33	304	1902	554	0	1837	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	299	594	28	315	1910	527	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3509	167	3428	3913	1081	0	5233	1572
Grp Volume(v), veh/h	668	509	250	346	366	359	304	1627	829	0	1837	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1821	1714	1689	1616	0	1689	1572
Q Serve(g_s), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	50.5	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	28.6	37.1	24.8	27.1	27.1	27.1	14.1	50.5	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.67	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
V/C Ratio(X)	0.82	1.18	0.72	1.16	1.16	1.17	0.97	0.99	1.05	0.00	1.00	
Avail Cap(c_a), veh/h	820	430	345	299	314	308	315	1648	789	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	0.26	0.26	0.26	0.00	0.80	0.00
Uniform Delay (d), s/veh	58.2	61.5	56.7	75.5	75.5	75.5	65.0	1.6	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	6.0	103.8	6.4	92.5	94.6	95.5	18.0	8.7	31.6	0.0	18.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	29.9	10.0	20.7	21.9	21.6	6.3	2.8	7.7	0.0	27.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	165.3	63.2	168.0	170.1	171.0	83.0	10.3	33.5	0.0	69.9	0.0
LnGrp LOS	E	F	E	F	F	F	F	B	F	A	F	
Approach Vol, veh/h		1427			1071			2760			1837	A
Approach Delay, s/veh		100.1			169.7			25.3			69.9	
Approach LOS		F			F			C			E	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	84.0	43.0	20.1	63.9	33.0
Change Period (Y+Rc), s	5.9	5.9	5.4	5.9	5.9
Max Green Setting (Gmax), s	78.1	37.1	14.7	58.0	27.1
Max Q Clear Time (g_c+I1), s	80.1	39.1	16.1	60.0	29.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	73.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

12: Rosecrans St & Midway Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	490	190	180	690	310	260	1725	130	420	1285	160
Future Volume (veh/h)	370	490	190	180	690	310	260	1725	130	420	1285	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	394	521	202	191	734	330	277	1835	138	447	1367	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	602	257	277	734	311	317	1924	144	494	2073	258
Arrive On Green	0.12	0.17	0.17	0.16	0.21	0.21	0.09	0.40	0.40	0.29	0.91	0.91
Sat Flow, veh/h	3428	3526	1505	1767	3526	1493	3428	4798	360	3428	4549	566
Grp Volume(v), veh/h	394	521	202	191	734	330	277	1290	683	447	1015	522
Grp Sat Flow(s),veh/h/ln	1714	1763	1505	1767	1763	1493	1714	1689	1780	1714	1689	1738
Q Serve(g_s), s	18.2	23.0	16.8	16.3	33.3	24.5	12.8	59.2	59.7	20.1	10.7	10.7
Cycle Q Clear(g_c), s	18.2	23.0	16.8	16.3	33.3	24.5	12.8	59.2	59.7	20.1	10.7	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.33
Lane Grp Cap(c), veh/h	420	602	257	277	734	311	317	1354	714	494	1539	792
V/C Ratio(X)	0.94	0.87	0.79	0.69	1.00	1.06	0.87	0.95	0.96	0.91	0.66	0.66
Avail Cap(c_a), veh/h	420	729	311	277	734	311	334	1391	733	494	1539	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.57	0.57	0.57	0.11	0.11	0.11
Uniform Delay (d), s/veh	69.6	64.6	42.6	63.8	63.4	34.2	71.7	46.4	46.6	55.9	4.3	4.3
Incr Delay (d2), s/veh	28.5	8.1	8.4	5.9	33.3	68.3	12.6	10.3	17.1	3.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	11.1	7.0	7.9	18.4	14.9	6.2	26.5	29.5	7.9	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.1	72.6	51.0	69.7	96.7	102.5	84.3	56.7	63.6	58.9	4.6	4.8
LnGrp LOS	F	E	D	E	F	F	F	E	E	E	A	A
Approach Vol, veh/h		1117			1255			2250			1984	
Approach Delay, s/veh		77.7			94.1			62.2			16.9	
Approach LOS		E			F			E			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.7	69.1	30.0	32.2	19.2	78.6	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	22.1	61.7	18.3	25.0	14.8	12.7	20.2	35.3
Green Ext Time (p_c), s	0.0	2.5	0.0	1.1	0.0	4.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	290	20	505	380	120	30	1585	675	160	1255	350
Future Volume (veh/h)	240	290	20	505	380	120	30	1585	675	160	1255	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	250	302	21	526	396	125	31	1651	703	167	1307	365
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	269	370	26	567	419	343	41	2209	669	210	1670	717
Arrive On Green	0.15	0.22	0.22	0.17	0.23	0.23	0.02	0.44	0.44	0.02	0.16	0.16
Sat Flow, veh/h	1767	1710	119	3428	1856	1518	1767	5066	1535	3428	3526	1513
Grp Volume(v), veh/h	250	0	323	526	396	125	31	1651	703	167	1307	365
Grp Sat Flow(s),veh/h/ln	1767	0	1829	1714	1856	1518	1767	1689	1535	1714	1763	1513
Q Serve(g_s), s	22.3	0.0	26.9	24.2	33.6	9.4	2.8	43.6	69.8	7.8	57.0	20.7
Cycle Q Clear(g_c), s	22.3	0.0	26.9	24.2	33.6	9.4	2.8	43.6	69.8	7.8	57.0	20.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	396	567	419	343	41	2209	669	210	1670	717
V/C Ratio(X)	0.93	0.00	0.82	0.93	0.94	0.36	0.75	0.75	1.05	0.80	0.78	0.51
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2209	669	249	1670	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.59	0.59	0.59	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	66.9	0.0	59.7	65.8	60.9	37.4	77.7	37.7	45.1	77.4	59.6	17.2
Incr Delay (d2), s/veh	28.3	0.0	9.1	11.2	17.4	0.1	9.9	2.4	48.7	8.6	2.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	13.5	11.5	17.9	3.6	1.4	18.4	35.4	3.8	27.8	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.2	0.0	68.7	77.1	78.4	37.5	87.6	40.1	93.8	86.0	62.2	19.0
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	B
Approach Vol, veh/h		573			1047			2385			1839	
Approach Delay, s/veh		80.3			72.8			56.6			55.8	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	75.5	30.9	39.5	8.1	81.5	29.3	41.1
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.8	71.8	26.2	28.9	4.8	59.0	24.3	35.6
Green Ext Time (p_c), s	0.0	0.0	0.2	0.5	0.0	2.6	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	61.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	965	190	450	895	140	450
Future Volume (veh/h)	965	190	450	895	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1060	209	495	984	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	978	192	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3004	572	1767	3618	373	1199
Grp Volume(v), veh/h	640	629	495	984	650	0
Grp Sat Flow(s),veh/h/ln	1763	1720	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	16.4	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	16.4	32.1	0.0
Prop In Lane		0.33	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	578	432	2173	457	0
V/C Ratio(X)	1.08	1.09	1.15	0.45	1.42	0.00
Avail Cap(c_a), veh/h	592	578	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.3	39.2	0.0
Incr Delay (d2), s/veh	60.9	63.9	89.8	0.1	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.6	25.5	22.4	6.1	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	97.6	100.6	131.6	11.4	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1269			1479	650	
Approach Delay, s/veh	99.1			51.6	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	31.0	42.5	73.5	37.0
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	27.0	* 37	67.6	32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1	18.4	34.1
Green Ext Time (p_c), s	0.0	0.0	9.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	105.6
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	310	870	30	0	1010
Future Vol, veh/h	0	310	870	30	0	1010
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	320	897	31	0	1041

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	484	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	526	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	516	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	516	-
HCM Lane V/C Ratio	-	-	0.619	-
HCM Control Delay (s)	-	-	22.7	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	4.2	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1315	1355	900	910	100
Future Volume (veh/h)	0	1315	1355	900	910	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1356	1397	928	938	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1655	1655	1229	1132	
Arrive On Green	0.00	0.47	0.47	0.47	0.33	0.00
Sat Flow, veh/h	0	3711	3618	1512	3428	1572
Grp Volume(v), veh/h	0	1356	1397	928	938	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1512	1714	1572
Q Serve(g_s), s	0.0	17.5	18.4	16.8	13.4	0.0
Cycle Q Clear(g_c), s	0.0	17.5	18.4	16.8	13.4	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1655	1655	1229	1132	
V/C Ratio(X)	0.00	0.82	0.84	0.75	0.83	
Avail Cap(c_a), veh/h	0	1692	1692	1245	1555	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.1	12.3	2.7	16.3	0.0
Incr Delay (d2), s/veh	0.0	3.2	4.0	2.6	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.2	6.6	11.9	4.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	15.3	16.4	5.4	18.8	0.0
LnGrp LOS	A	B	B	A	B	
Approach Vol, veh/h		1356	2325		938	A
Approach Delay, s/veh		15.3	12.0		18.8	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.2		22.7		30.2
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		19.5		15.4		20.4
Green Ext Time (p_c), s		4.1		2.1		4.4

Intersection Summary			
HCM 6th Ctrl Delay			14.4
HCM 6th LOS			B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	90	5	60	90	987	30	50	737	110
Future Volume (veh/h)	80	0	100	90	5	60	90	987	30	50	737	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	102	6	68	102	1122	34	57	838	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	235	36	193	478	30	337	129	1952	59	80	1590	235
Arrive On Green	0.24	0.00	0.24	0.24	0.24	0.24	0.07	0.39	0.39	0.05	0.36	0.36
Sat Flow, veh/h	498	152	814	1258	125	1417	1767	5044	153	1767	4424	655
Grp Volume(v), veh/h	205	0	0	102	0	74	102	751	405	57	638	325
Grp Sat Flow(s),veh/h/ln	1464	0	0	1258	0	1542	1767	1689	1820	1767	1689	1702
Q Serve(g_s), s	3.1	0.0	0.0	0.0	0.0	1.7	2.5	7.8	7.8	1.4	6.6	6.7
Cycle Q Clear(g_c), s	5.3	0.0	0.0	2.7	0.0	1.7	2.5	7.8	7.8	1.4	6.6	6.7
Prop In Lane	0.44		0.56	1.00		0.92	1.00		0.08	1.00		0.38
Lane Grp Cap(c), veh/h	464	0	0	478	0	366	129	1307	704	80	1214	612
V/C Ratio(X)	0.44	0.00	0.00	0.21	0.00	0.20	0.79	0.57	0.58	0.71	0.53	0.53
Avail Cap(c_a), veh/h	1148	0	0	1086	0	1111	214	1638	883	266	1728	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	14.0	0.0	13.6	20.3	10.8	10.8	21.0	11.3	11.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	4.0	0.5	1.0	4.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.7	0.0	0.5	1.1	2.4	2.6	0.6	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	14.0	0.0	13.7	24.3	11.3	11.8	25.2	11.7	12.1
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		205			176			1258			1020	
Approach Delay, s/veh		15.1			13.9			12.5			12.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.4	22.6		15.5	7.7	21.4		15.5
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.4	9.8		7.3	4.5	8.7		4.7
Green Ext Time (p_c), s	0.0	7.1		0.9	0.0	6.2		0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	110.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	670	470	867	937	30
Future Vol, veh/h	0	670	470	867	937	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	705	495	913	986	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	529	1028	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 421	~ 376	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 413	~ 372	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 352	68.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 372	-	413	-	-
HCM Lane V/C Ratio	1.33	-	1.708	-	-
HCM Control Delay (s)	195.2	-	$ 352	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	23.3	-	42.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	89

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	560	0	1513	1703	100
Future Vol, veh/h	0	560	0	1513	1703	100
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	577	0	1560	1756	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	951	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 259	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 254	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 616.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	254	-	-
HCM Lane V/C Ratio	-	2.273	-	-
HCM Control Delay (s)	-	$ 616.3	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	45.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	20	120	150	60	110	280	1208	20	20	2118	125
Future Volume (veh/h)	195	20	120	150	60	110	280	1208	20	20	2118	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	217	22	133	167	67	122	311	1342	22	22	2353	139
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1629	699	29	1249	73
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.02	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3376	197
Grp Volume(v), veh/h	217	22	133	167	67	122	311	1342	22	22	1214	1278
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1810
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	46.3	1.1	1.7	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	46.3	1.1	1.7	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1629	699	29	652	670
V/C Ratio(X)	1.62	0.05	0.34	0.87	0.13	0.34	1.52	0.82	0.03	0.76	1.86	1.91
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1629	699	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	32.7	20.5	68.6	44.1	44.1
Incr Delay (d2), s/veh	311.3	0.0	0.2	14.2	0.0	0.2	257.7	3.7	0.0	13.8	393.4	414.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	0.6	3.9	6.6	1.8	3.4	21.9	20.3	0.4	0.9	93.7	100.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	376.0	40.3	43.6	75.7	37.8	40.5	319.6	36.3	20.6	82.4	437.5	458.4
LnGrp LOS	F	D	D	E	D	D	F	D	C	F	F	F
Approach Vol, veh/h		372			356			1675			2514	
Approach Delay, s/veh		237.3			56.5			88.7			445.0	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	73.4	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	3.7	48.3	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	8.3	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		279.8
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3307.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2290	1930	1508	2198	190
Future Vol, veh/h	0	2290	1930	1508	2198	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2544	2144	1676	2442	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1241	2663	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 165	~ 152	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 162	~ 151	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 6668.8	$ 3365.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 151	-	162	-	-
HCM Lane V/C Ratio	14.202	-	15.706	-	-
HCM Control Delay (s)	$ 5995.1	-	$ 6668.8	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	252.4	-	301	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	280	230	350	10	490	60	270	10	130	50
Future Volume (veh/h)	10	150	280	230	350	10	490	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	295	242	368	11	516	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	194	361	203	629	19	490	48	217	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	551	1028	920	1789	53	813	99	447	33	1267	465
Grp Volume(v), veh/h	11	0	453	242	0	379	863	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1579	920	0	1843	1360	0	0	1765	0	0
Q Serve(g_s), s	0.6	0.0	15.7	5.4	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	15.7	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.03	0.60		0.33	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
V/C Ratio(X)	0.04	0.00	0.82	1.19	0.00	0.58	1.14	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	555	203	0	648	755	0	0	919	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	17.7	28.9	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	9.8	123.6	0.0	1.4	79.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.5	9.8	0.0	4.0	26.3	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	27.5	152.4	0.0	17.3	96.4	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		464			621			863			201	
Approach Delay, s/veh		27.3			70.0			96.4			9.0	
Approach LOS		C			E			F			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		34.0		26.0		34.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		21.1		29.1		21.1		29.1				
Max Q Clear Time (g_c+I1), s		17.7		6.0		23.1		31.1				
Green Ext Time (p_c), s		1.4		0.8		0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	65.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	606	530	50	0	510	280
Future Volume (veh/h)	5	10	30	80	190	310	606	530	50	0	510	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	659	576	54	0	554	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1059	99	0	358	197
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1665	156	0	1116	612
Grp Volume(v), veh/h	49	0	0	631	0	0	659	0	630	0	0	858
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1821	0	0	1728
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	15.4	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.09	0.00		0.35
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	1.43	0.00	0.54	0.00	0.00	1.55
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.1	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	207.6	0.0	0.3	0.0	0.0	254.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	34.9	0.0	5.1	0.0	0.0	49.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	237.2	0.0	8.4	0.0	0.0	281.7
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1289			858	
Approach Delay, s/veh		23.8			251.2			125.4			281.7	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3
Max Q Clear Time (g_c+I1), s		17.4		3.9	22.8	27.7		21.3
Green Ext Time (p_c), s		3.0		0.1	0.0	0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		199.1
HCM 6th LOS		F

Intersection	
Intersection Delay, s/veh	112.4
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	416	0	656	260	0
Future Vol, veh/h	530	416	0	656	260	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	462	0	729	289	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	97.9	169.8	20.2
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	656	530	416	260
LT Vol	0	530	0	0
Through Vol	656	0	0	260
RT Vol	0	0	416	0
Lane Flow Rate	729	589	462	289
Geometry Grp	2	7	7	2
Degree of Util (X)	1.301	1.232	0.813	0.565
Departure Headway (Hd)	6.722	8.226	6.991	7.685
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	547	448	522	474
Service Time	4.722	5.926	4.691	5.685
HCM Lane V/C Ratio	1.333	1.315	0.885	0.61
HCM Control Delay	169.8	148.5	33.4	20.2
HCM Lane LOS	F	F	D	C
HCM 95th-tile Q	29.1	21.9	7.9	3.4

Intersection	
Intersection Delay, s/veh	95.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	336	60	110	20	501	5	220	10	5	5
Future Vol, veh/h	10	400	336	60	110	20	501	5	220	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	354	63	116	21	527	5	232	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	30.4	16.3	184.5	12
HCM LOS	D	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	69%	2%	0%	32%	50%
Vol Thru, %	1%	98%	0%	58%	25%
Vol Right, %	30%	0%	100%	11%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	726	410	336	190	20
LT Vol	501	10	0	60	10
Through Vol	5	400	0	110	5
RT Vol	220	0	336	20	5
Lane Flow Rate	764	432	354	200	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.341	0.829	0.609	0.393	0.046
Departure Headway (Hd)	6.316	7.874	7.14	8.158	8.62
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	581	462	509	444	418
Service Time	4.32	5.574	4.84	6.158	6.62
HCM Lane V/C Ratio	1.315	0.935	0.695	0.45	0.05
HCM Control Delay	184.5	38.6	20.3	16.3	12
HCM Lane LOS	F	E	C	C	B
HCM 95th-tile Q	33	8	4	1.8	0.1

Intersection	
Intersection Delay, s/veh	163.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	666	145	256
Future Vol, veh/h	60	70	200	666	145	256
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	812	177	312
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	12.2	252.2	19.6
HCM LOS	B	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	23%	100%	0%	0%
Vol Thru, %	77%	0%	0%	36%
Vol Right, %	0%	0%	100%	64%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	866	60	70	401
LT Vol	200	60	0	0
Through Vol	666	0	0	145
RT Vol	0	0	70	256
Lane Flow Rate	1056	73	85	489
Geometry Grp	2	7	7	2
Degree of Util (X)	1.51	0.157	0.154	0.68
Departure Headway (Hd)	5.146	8.665	7.425	5.573
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	708	416	486	655
Service Time	3.212	6.365	5.125	3.573
HCM Lane V/C Ratio	1.492	0.175	0.175	0.747
HCM Control Delay	252.2	13	11.5	19.6
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	51.6	0.6	0.5	5.3

Intersection	
Intersection Delay, s/veh	35.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	446	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	0	446	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	0	531	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	36.6	39.9	16.8
HCM LOS	-	E	E	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	2%	26%
Vol Thru, %	100%	0%	100%	0%	74%
Vol Right, %	0%	100%	0%	98%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	456	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	0	160
RT Vol	0	250	0	446	0
Lane Flow Rate	500	298	0	543	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.955	0.509	0	0.875	0.499
Departure Headway (Hd)	6.875	6.158	8.178	5.801	7.021
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	530	589	0	619	517
Service Time	4.575	3.858	6.215	3.897	5.031
HCM Lane V/C Ratio	0.943	0.506	0	0.877	0.495
HCM Control Delay	54.7	15.1	11.2	36.6	16.8
HCM Lane LOS	F	C	N	E	C
HCM 95th-tile Q	12.3	2.9	0	10.2	2.8

Intersection	
Intersection Delay, s/veh	121.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	240	150	0	0	0	150	120	250	330	140	110
Future Vol, veh/h	160	240	150	0	0	0	150	120	250	330	140	110
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	176	264	165	0	0	0	165	132	275	363	154	121
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	115.3	94.1	152.6
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	29%	57%
Vol Thru, %	23%	44%	24%
Vol Right, %	48%	27%	19%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	550	580
LT Vol	150	160	330
Through Vol	120	240	140
RT Vol	250	150	110
Lane Flow Rate	571	604	637
Geometry Grp	1	1	1
Degree of Util (X)	1.086	1.151	1.248
Departure Headway (Hd)	7.635	7.475	7.661
Convergence, Y/N	Yes	Yes	Yes
Cap	480	490	478
Service Time	5.635	5.475	5.661
HCM Lane V/C Ratio	1.19	1.233	1.333
HCM Control Delay	94.1	115.3	152.6
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.6	19.7	23.8

29: Washington St & San Diego Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2029	0	0	609	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2029	0	0	609	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2136	0	0	641	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2136	0	0	641	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.7	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	9.7	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.88	0.00	0.00	0.37	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	13.5	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.5	0.0	0.0	0.6	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.2	0.0	0.0	3.8	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.5	0.0	0.0	14.1	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2620			1357	
Approach Delay, s/veh					32.0			7.0			29.2	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.4			17.0	47.4		21.6
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			14.0	40.3		11.9
Green Ext Time (p_c), s		36.0			0.0	0.0		2.0

Intersection Summary			
HCM 6th Ctrl Delay			16.8
HCM 6th LOS			B

30: Washington St & Hancock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1149	170	300	519	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1149	170	300	519	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1185	175	309	535	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1185	175	309	535	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	10.0	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	10.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.20	0.42	0.90	0.38	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.67	0.67	0.92	0.92	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	13.2	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	96.7	2.0	23.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	22.9	2.8	4.3	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	124.6	23.3	61.9	13.9	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1360			844	
Approach Delay, s/veh		43.7						111.6			31.5	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	35.0		38.0		48.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	19.7	32.1		35.1		12.0
Green Ext Time (p_c), s	0.0	0.0		0.0		4.4

Intersection Summary			
HCM 6th Ctrl Delay			62.4
HCM 6th LOS			E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱		↰	↰↑↱		↰	↑↑			↑↑	↱
Traffic Volume (veh/h)	120	0	150	80	70	200	230	999	0	0	620	179
Future Volume (veh/h)	120	0	150	80	70	200	230	999	0	0	620	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1052	0	0	653	188
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	41	0	51	378	397	318	212	1471	0	0	954	408
Arrive On Green	0.06	0.00	0.06	0.21	0.21	0.21	0.12	0.52	0.00	0.00	0.34	0.34
Sat Flow, veh/h	727	0	911	1767	1856	1485	1767	2897	0	0	2897	1208
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1052	0	0	653	188
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1485	1767	1411	0	0	1411	1208
Q Serve(g_s), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	20.2	0.0	0.0	14.1	8.7
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.8	2.3	9.2	8.5	20.2	0.0	0.0	14.1	8.7
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	92	0	0	378	397	318	212	1471	0	0	954	408
V/C Ratio(X)	3.08	0.00	0.00	0.22	0.19	0.66	1.14	0.72	0.00	0.00	0.68	0.46
Avail Cap(c_a), veh/h	92	0	0	647	680	544	212	1813	0	0	1280	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	0.0	23.0	22.8	25.5	31.2	13.0	0.0	0.0	20.2	18.4
Incr Delay (d2), s/veh	962.7	0.0	0.0	0.1	0.1	0.9	105.9	0.7	0.0	0.0	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.2	0.0	0.0	1.1	1.0	3.2	9.7	5.6	0.0	0.0	4.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	996.2	0.0	0.0	23.1	22.9	26.4	137.1	13.7	0.0	0.0	21.4	19.4
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	B
Approach Vol, veh/h		284			369			1294			841	
Approach Delay, s/veh		996.2			25.0			36.8			20.9	
Approach LOS		F			C			D			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		41.4		8.0	13.0	28.4		21.6
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		22.2		6.0	10.5	16.1		11.2
Green Ext Time (p_c), s		5.6		0.0	0.0	5.5		1.2

Intersection Summary	
HCM 6th Ctrl Delay	128.2
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↑	↱					↰↑↱			↰↑↑	
Traffic Volume (veh/h)	739	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	739	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	889	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1128	0	834				0	647	118	346	661	0
Arrive On Green	0.32	0.00	0.32				0.00	0.22	0.22	0.20	0.20	0.00
Sat Flow, veh/h	3534	0	1528				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	889	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1528				0	1763	1716	1767	1689	0
Q Serve(g_s), s	12.5	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Cycle Q Clear(g_c), s	12.5	0.0	1.8				0.0	8.9	9.0	10.7	2.6	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1128	0	834				0	388	377	346	661	0
V/C Ratio(X)	0.79	0.00	0.12				0.00	0.79	0.79	1.02	0.28	0.00
Avail Cap(c_a), veh/h	1991	0	1207				0	451	439	346	661	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.9	0.0	6.2				0.0	20.1	20.2	22.0	18.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0				0.0	6.4	7.1	54.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.8				0.0	4.0	4.0	9.2	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	6.3				0.0	26.5	27.2	76.5	19.0	0.0
LnGrp LOS	B	A	A				A	C	C	F	B	A
Approach Vol, veh/h		993						604			542	
Approach Delay, s/veh		16.2						26.9			56.5	
Approach LOS		B						C			E	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	16.0	23.6	15.0
Change Period (Y+Rc), s	4.0	6.2	4.3
Max Green Setting (Gmax), s	14.0	30.8	10.7
Max Q Clear Time (g_c+I1), s	11.0	14.5	12.7
Green Ext Time (p_c), s	0.8	2.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	110	270	601	70	240	1311	80
Future Volume (veh/h)	100	290	140	430	420	110	270	601	70	240	1311	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	112	276	613	71	245	1338	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	393	389	289	458	120	112	1103	126	182	1471	90
Arrive On Green	0.06	0.26	0.26	0.20	0.39	0.39	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	1767	1537	1522	1464	1168	305	1767	4580	523	1464	4870	298
Grp Volume(v), veh/h	102	296	143	439	0	541	276	450	234	245	928	492
Grp Sat Flow(s),veh/h/ln	1767	1537	1522	1464	0	1472	1767	1689	1725	1464	1689	1791
Q Serve(g_s), s	6.0	18.5	8.1	20.6	0.0	36.8	6.6	12.2	12.5	13.0	27.6	27.6
Cycle Q Clear(g_c), s	6.0	18.5	8.1	20.6	0.0	36.8	6.6	12.2	12.5	13.0	27.6	27.6
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.30	1.00		0.17
Lane Grp Cap(c), veh/h	107	393	389	289	0	578	112	813	415	182	1020	541
V/C Ratio(X)	0.96	0.75	0.37	1.52	0.00	0.94	2.47	0.55	0.56	1.34	0.91	0.91
Avail Cap(c_a), veh/h	107	471	466	289	0	653	112	821	420	182	1028	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	35.8	31.9	41.9	0.0	30.5	48.9	34.7	34.8	45.7	35.1	35.1
Incr Delay (d2), s/veh	72.6	4.3	0.2	251.0	0.0	19.8	688.0	1.3	2.6	186.9	12.0	19.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.3	3.0	27.5	0.0	15.8	24.2	5.1	5.5	14.1	12.8	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.5	40.1	32.2	292.9	0.0	50.3	736.9	36.0	37.4	232.6	47.1	54.9
LnGrp LOS	F	D	C	F	A	D	F	D	D	F	D	D
Approach Vol, veh/h		541			980			960			1665	
Approach Delay, s/veh		53.4			159.0			237.8			76.7	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.4	25.0	31.6	11.0	36.8	10.7	45.9
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	14.5	22.6	20.5	8.6	29.6	8.0	38.8
Green Ext Time (p_c), s	0.0	5.0	0.0	1.1	0.0	1.9	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	130.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	493	1810	180	130	1040	139	170	549	170	229	1149	913
Future Volume (veh/h)	493	1810	180	130	1040	139	170	549	170	229	1149	913
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	567	2080	207	149	1195	160	195	631	195	263	1321	1049
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	798	106	155	1589	480	286	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.41	0.41	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3112	415	1767	3832	1158	1767	5066	1537
Grp Volume(v), veh/h	567	1114	1173	149	675	680	195	554	272	263	1321	1049
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1765	1767	1689	1613	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	16.1	16.6	20.5	25.3	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	16.1	16.6	20.5	25.3	68.4
Prop In Lane	1.00		0.18	1.00		0.24	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	453	155	1400	669	286	2475	1140
V/C Ratio(X)	1.30	1.55	1.61	0.94	1.49	1.50	1.26	0.40	0.41	0.92	0.53	0.92
Avail Cap(c_a), veh/h	437	718	728	159	452	453	155	1400	669	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	28.7	28.8	57.8	24.8	15.4
Incr Delay (d2), s/veh	150.2	255.5	280.8	52.3	233.0	238.0	156.9	0.8	1.8	27.1	0.8	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.5	75.3	81.6	7.6	45.1	45.8	12.3	6.8	6.8	11.3	10.3	28.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	202.9	297.0	322.3	115.6	285.1	290.0	220.8	29.5	30.7	84.9	25.6	28.7
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	C
Approach Vol, veh/h		2854			1504			1021			2633	
Approach Delay, s/veh		288.7			270.5			66.4			32.8	
Approach LOS		F			F			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	64.3	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	22.5	18.6	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	172.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1893	3050	2080	200	120	60
Future Volume (veh/h)	1893	3050	2080	200	120	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2035	3280	2237	0	129	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4165	2223		160	142
Arrive On Green	0.35	0.82	0.44	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2035	3280	2237	0	129	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	39.2	52.7	0.0	8.6	4.7
Cycle Q Clear(g_c), s	41.6	39.2	52.7	0.0	8.6	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4165	2223		160	142
V/C Ratio(X)	1.71	0.79	1.01		0.81	0.46
Avail Cap(c_a), veh/h	1188	4165	2223		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	5.4	33.7	0.0	53.6	51.8
Incr Delay (d2), s/veh	324.1	1.6	20.6	0.0	3.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	40.7	10.1	25.1	0.0	4.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	363.3	7.0	54.3	0.0	57.2	52.6
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5315	2237	A	194	
Approach Delay, s/veh		143.4	54.3		55.7	
Approach LOS		F	D		E	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	104.0	16.0	46.0	58.0
Change Period (Y+Rc), s	5.3	5.2	4.4	* 5.3
Max Green Setting (Gmax), s	79.5	30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s	41.2	10.6	43.6	54.7
Green Ext Time (p_c), s	38.2	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	115.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	190	290	280	100	240	220	1210	222	232	1260	230
Future Volume (veh/h)	190	190	290	280	100	240	220	1210	222	232	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	198	302	292	104	250	229	1260	231	242	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	257	414	337	178	462	378	268	1082	196	249	1507	780
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3428	1856	1508	1767	1856	1517	3428	2965	538	1767	3526	1549
Grp Volume(v), veh/h	198	198	302	292	104	250	229	744	747	242	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1508	1767	1856	1517	1714	1763	1740	1767	1763	1549
Q Serve(g_s), s	6.5	10.7	22.4	11.6	5.1	17.0	7.6	42.0	42.0	15.7	39.1	10.5
Cycle Q Clear(g_c), s	6.5	10.7	22.4	11.6	5.1	17.0	7.6	42.0	42.0	15.7	39.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	257	414	337	178	462	378	268	643	635	249	1507	780
V/C Ratio(X)	0.77	0.48	0.90	1.64	0.22	0.66	0.85	1.16	1.18	0.97	0.87	0.31
Avail Cap(c_a), veh/h	340	500	406	178	497	406	268	643	635	249	1510	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	38.9	43.4	51.7	34.4	38.8	52.4	36.5	36.5	49.2	30.0	16.9
Incr Delay (d2), s/veh	5.3	0.9	19.6	311.6	0.1	2.7	21.6	86.9	95.3	49.1	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	5.0	9.9	20.4	2.3	6.4	4.0	32.7	33.8	10.2	16.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	39.7	63.0	363.4	34.5	41.5	74.0	123.5	131.8	98.3	36.0	17.2
LnGrp LOS	E	D	E	F	C	D	E	F	F	F	D	B
Approach Vol, veh/h		698			646			1720			1794	
Approach Delay, s/veh		54.9			185.9			120.5			41.9	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.2	13.4	54.5	13.0	34.2
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	17.7	44.0	13.6	24.4	9.6	41.1	8.5	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	6.6	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	90.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B PM | Old Town Complex

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1282	320	290	570	0	0	0	0	190	0	1102
Future Volume (veh/h)	0	1282	320	290	570	0	0	0	0	190	0	1102
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1349	337	305	600	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1533	684	988	2725	0				231	0	
Arrive On Green	0.00	0.43	0.43	0.58	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1349	337	305	600	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	35.0	15.4	4.6	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	35.0	15.4	4.6	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1533	684	988	2725	0				231	0	
V/C Ratio(X)	0.00	0.88	0.49	0.31	0.22	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	988	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.12	0.12	0.42	0.42	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.9	20.3	16.0	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.3	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.7	5.4	1.6	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.9	20.6	16.1	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	C	B	A	A				D	A	
Approach Vol, veh/h		1686			905						200	A
Approach Delay, s/veh		25.6			5.5						50.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	33.8	48.5		17.7		82.3
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	16.6	37.0		13.1		2.0
Green Ext Time (p_c), s	0.6	6.5		0.1		2.8

Intersection Summary			
HCM 6th Ctrl Delay			20.9
HCM 6th LOS			C

Notes
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050B PM | Old Town Complex

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	912	560	0	0	540	380	320	10	640	0	0	0
Future Volume (veh/h)	912	560	0	0	540	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	921	566	0	0	545	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	977	2168	0	0	543	382	488	15	447			
Arrive On Green	0.48	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2031	1365	1717	53	1572			
Grp Volume(v), veh/h	921	566	0	0	496	433	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1540	1770	0	1572			
Q Serve(g_s), s	25.5	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.5	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.89	0.97		1.00			
Lane Grp Cap(c), veh/h	977	2168	0	0	494	431	503	0	447			
V/C Ratio(X)	0.94	0.26	0.00	0.00	1.00	1.00	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1005	2168	0	0	494	431	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.55	0.55	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.4	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	10.3	0.2	0.0	0.0	41.6	44.5	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.2	0.0	0.0	0.0	17.3	15.4	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.2	0.0	0.0	77.6	80.5	34.2	0.0	249.0			
LnGrp LOS	D	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1487			929			979				
Approach Delay, s/veh		22.2			78.9			176.0				
Approach LOS		C			E			F				

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.0		33.0	34.0	33.0
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5
Max Green Setting (Gmax), s		61.5		28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s		2.0		30.4	27.5	30.0
Green Ext Time (p_c), s		2.6		0.0	0.8	0.0

Intersection Summary			
HCM 6th Ctrl Delay			82.1
HCM 6th LOS			F

Notes
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1050	10	360	820	0	1250
Future Volume (veh/h)	1050	10	360	820	0	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1115	0	379	0	0	1316
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1230	560	1562		0	1562
Arrive On Green	0.35	0.00	0.44	0.00	0.00	0.44
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1115	0	379	0	0	1316
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	20.4	0.0	4.6	0.0	0.0	22.6
Cycle Q Clear(g_c), s	20.4	0.0	4.6	0.0	0.0	22.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1230	560	1562		0	1562
V/C Ratio(X)	0.91	0.00	0.24		0.00	0.84
Avail Cap(c_a), veh/h	1273	580	1562		0	1562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	11.8	0.0	0.0	16.8
Incr Delay (d2), s/veh	9.5	0.0	0.4	0.0	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	1.7	0.0	0.0	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.6	0.0	12.2	0.0	0.0	22.5
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1115		379	A		1316
Approach Delay, s/veh	30.6		12.2			22.5
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.6	35.6	32.4
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.6	24.6	22.4
Green Ext Time (p_c), s	3.3	4.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX Q

YEAR 2050 NO ACTION ALTERNATIVE INCLUDING AN APM FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6900	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1265
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.6
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6860	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1258
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8380	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1536
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes (N), ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9690	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1777
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.8
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7950	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1760
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8480	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1877
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.2
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9040	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2001
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9040	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2001
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8460	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1873
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1997
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9620	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2130
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	47.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	45.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9620	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2130
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	47.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	45.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9370	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2075
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9980	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2210
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10650	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2358
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10640	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2356
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7780	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2153
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.3
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8300	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2297
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8850	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2449
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8840	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2446
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10620	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2351
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.06
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11320	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2506
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.13
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12080	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2675
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.21
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12070	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2672
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.21
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8700	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1926
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.6
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9270	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2052
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9890	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2190
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9890	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2190
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	3840	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1050
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	3010	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	823
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.2
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4880	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1334
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.0
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4700	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1285
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.3
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4110	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1124
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5640	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1542
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	5800	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2114
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.4
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes (N), ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	4430	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1615
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.3
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6830	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1494
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9370	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2049
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	49.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9650	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2110
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7360	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1609
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6440	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1760
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8830	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2414
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9090	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1988
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6940	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1518
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6880	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1879
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9440	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2578
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.16
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9720	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2123
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2050 No Build (APM)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7420	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1621
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX R

YEAR 2050 WITH ALTERNATIVE 4 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	841
Future Volume (vph)	190	210	90	140	140	841
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	914
Direction, Lane #	**EB 1**	**EB 2**	**WB 1**	**SB 1**	**SB 2**	
Volume Total (vph)	207	228	250	152	914	
Volume Left (vph)	207	0	0	152	0	
Volume Right (vph)	0	0	152	0	914	
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55	
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2	
Degree Utilization, x	0.33	0.33	0.32	0.24	0.81	
Capacity (veh/h)	610	667	741	577	1112	
Control Delay (s)	10.4	9.6	9.9	10.5	18.3	
Approach Delay (s)	10.0		9.9	17.2		
Approach LOS	A		A	C		

Intersection Summary			
Delay	14.4		
Level of Service	B		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	452	120	871	60	280	190
Future Volume (veh/h)	452	120	871	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	481	128	927	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	516	1277	1179		437	659
Arrive On Green	0.29	0.69	0.33	0.00	0.13	0.13
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	481	128	927	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	18.0	1.6	16.1	0.0	5.6	5.8
Cycle Q Clear(g_c), s	18.0	1.6	16.1	0.0	5.6	5.8
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	516	1277	1179		437	659
V/C Ratio(X)	0.93	0.10	0.79		0.68	0.31
Avail Cap(c_a), veh/h	516	1504	1611		1137	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	3.5	20.4	0.0	28.3	13.1
Incr Delay (d2), s/veh	23.8	0.0	1.2	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.4	6.3	0.0	2.3	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.1	3.6	21.6	0.0	29.0	13.2
LnGrp LOS	D	A	C		C	B
Approach Vol, veh/h		609	927	A	500	
Approach Delay, s/veh		38.0	21.6		22.6	
Approach LOS		D	C		C	
Timer - Assigned Phs		**2**		**4**	**5**	**6**
Phs Duration (G+Y+Rc), s		52.7		15.2	24.0	28.7
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.6		7.8	20.0	18.1
Green Ext Time (p_c), s		0.5		0.9	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

3: Taylor St & Morena Blvd/Whitman St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	307	0	0	10	458	462	5	10	861	220
Future Volume (veh/h)	140	5	307	0	0	10	458	462	5	10	861	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	323				482	486	5	11	906	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	940	0	601				429	1724	18	20	1009	258
Arrive On Green	0.27	0.00	0.27				0.13	0.48	0.48	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1521				3428	3573	37	1767	2740	700
Grp Volume(v), veh/h	151	0	323				482	240	251	11	582	556
Grp Sat Flow(s),veh/h/ln	1767	0	1521				1714	1763	1847	1767	1763	1678
Q Serve(g_s), s	2.0	0.0	10.0				7.6	4.9	5.0	0.4	18.9	19.0
Cycle Q Clear(g_c), s	2.0	0.0	10.0				7.6	4.9	5.0	0.4	18.9	19.0
Prop In Lane	1.00		1.00				1.00		0.02	1.00		0.42
Lane Grp Cap(c), veh/h	940	0	601				429	850	891	20	649	618
V/C Ratio(X)	0.16	0.00	0.54				1.12	0.28	0.28	0.56	0.90	0.90
Avail Cap(c_a), veh/h	1746	0	948				429	850	891	148	662	630
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	14.3				26.6	9.4	9.4	29.9	18.1	18.1
Incr Delay (d2), s/veh	0.1	0.0	1.2				81.5	0.2	0.2	8.9	15.1	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2				7.8	1.7	1.8	0.2	9.5	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	15.5				108.1	9.6	9.6	38.7	33.2	34.1
LnGrp LOS	B	A	B				F	A	A	D	C	C
Approach Vol, veh/h		474						973			1149	
Approach Delay, s/veh		16.1						58.4			33.7	
Approach LOS		B						E			C	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.1	34.2		21.5	12.0	27.3
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.4	7.0		12.0	9.6	21.0
Green Ext Time (p_c), s	0.0	3.1		2.9	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

4: Taylor St & Juan St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	99	10	210	50	710	62	130	858	40
Future Volume (veh/h)	10	10	10	99	10	210	50	710	62	130	858	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	103	10	219	52	740	65	135	894	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	207	201	160	199	46	308	70	1568	137	173	1334	63
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.33	0.33	0.10	0.39	0.39
Sat Flow, veh/h	384	645	515	364	146	989	1767	4723	412	1767	3420	161
Grp Volume(v), veh/h	30	0	0	332	0	0	52	528	277	135	461	475
Grp Sat Flow(s),veh/h/ln	1544	0	0	1499	0	0	1767	1689	1758	1767	1763	1818
Q Serve(g_s), s	0.0	0.0	0.0	7.1	0.0	0.0	1.6	6.8	6.9	4.1	11.9	11.9
Cycle Q Clear(g_c), s	0.7	0.0	0.0	10.6	0.0	0.0	1.6	6.8	6.9	4.1	11.9	11.9
Prop In Lane	0.33		0.33	0.31		0.66	1.00		0.23	1.00		0.09
Lane Grp Cap(c), veh/h	568	0	0	553	0	0	70	1122	584	173	688	709
V/C Ratio(X)	0.05	0.00	0.00	0.60	0.00	0.00	0.74	0.47	0.48	0.78	0.67	0.67
Avail Cap(c_a), veh/h	910	0	0	901	0	0	180	1544	804	341	967	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	16.6	0.0	0.0	26.1	14.5	14.5	24.2	13.8	13.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	5.5	0.4	0.8	2.9	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	3.3	0.0	0.0	0.7	2.3	2.5	1.7	4.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	0.0	0.0	17.0	0.0	0.0	31.6	14.9	15.4	27.1	15.3	15.3
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			332			857			1071	
Approach Delay, s/veh		13.3			17.0			16.1			16.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	23.1		22.0	6.6	26.3		22.0
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	6.1	8.9		2.7	3.6	13.9		12.6
Green Ext Time (p_c), s	0.1	6.3		0.1	0.0	7.1		1.4

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	682	230	180	797	0	180	0	150	0	0	0
Future Volume (veh/h)	0	682	230	180	797	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	703	237	186	822	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1103	365	210	1641	0	405	0	307	0	372	0
Arrive On Green	0.00	0.38	0.38	0.12	0.59	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	3045	964	1767	2849	0	1255	0	1531	0	1856	0
Grp Volume(v), veh/h	0	640	300	186	822	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1218	1767	1388	0	1255	0	1531	0	1856	0
Q Serve(g_s), s	0.0	9.3	9.5	4.9	8.1	0.0	6.5	0.0	4.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.3	9.5	4.9	8.1	0.0	6.5	0.0	4.2	0.0	0.0	0.0
Prop In Lane	0.00		0.79	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1007	461	210	1641	0	405	0	307	0	372	0
V/C Ratio(X)	0.00	0.64	0.65	0.88	0.50	0.00	0.46	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1418	650	210	2070	0	955	0	979	0	1222	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.0	12.1	20.4	5.6	0.0	17.7	0.0	16.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.5	32.0	0.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	2.3	3.7	1.5	0.0	1.7	0.0	1.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.6	13.5	52.4	5.7	0.0	18.0	0.0	17.2	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		940			1008			341			0	
Approach Delay, s/veh		12.9			14.3			17.6			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	22.7	14.3	32.7	14.3
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	6.9	11.5	0.0	10.1	8.5
Green Ext Time (p_c), s	0.0	5.3	0.0	4.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	310	230	527	270	180	280	698	552	80	534	200
Future Volume (veh/h)	240	310	230	527	270	180	280	698	552	80	534	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.92	1.00		0.96	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	258	333	247	567	290	194	301	751	594	86	574	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
Arrive On Green	0.08	0.30	0.30	0.11	0.33	0.33	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1767	2776	1270	2699	1461	1144	1767	3526	1183	1391	3526	1412
Grp Volume(v), veh/h	258	333	247	567	290	194	301	751	594	86	574	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1270	1350	1461	1144	1767	1763	1183	1391	1763	1412
Q Serve(g_s), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	22.1	37.9	7.3	15.9	14.7
Cycle Q Clear(g_c), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	22.1	37.9	7.3	15.9	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
V/C Ratio(X)	1.85	0.40	0.50	1.84	0.59	0.51	2.28	0.67	1.15	0.84	0.51	0.48
Avail Cap(c_a), veh/h	139	839	501	308	493	386	132	1119	517	105	1122	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	33.3	29.1	52.9	33.0	31.8	55.2	35.3	34.2	54.6	33.3	32.9
Incr Delay (d2), s/veh	410.6	0.4	0.9	392.1	1.4	0.6	601.4	1.6	87.9	40.3	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.1	3.9	5.6	21.3	7.1	4.5	26.0	9.7	27.2	3.7	6.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	465.6	33.7	30.0	445.0	34.4	32.4	656.7	36.9	122.1	95.0	33.5	33.2
LnGrp LOS	F	C	C	F	C	C	F	D	F	F	C	C
Approach Vol, veh/h		838			1051			1646			875	
Approach Delay, s/veh		165.6			255.5			181.0			39.5	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.6	14.3	44.5	14.8	45.8	14.2	44.6
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	20.0	10.9	17.9	11.4	21.7	9.3	39.9
Green Ext Time (p_c), s	0.0	3.6	0.0	3.1	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	167.7
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	2.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	730	610	140
Future Vol, veh/h	50	30	70	730	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	745	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1313	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	161	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	345	706	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	507	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	49.4	0.9	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	159	-	-
HCM Lane V/C Ratio	0.101	-	0.513	-	-
HCM Control Delay (s)	10.7	-	49.4	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	397	360	2215	0	0	2711	630
Future Volume (veh/h)	0	0	0	90	650	397	360	2215	0	0	2711	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	409	371	2284	0	0	2795	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				88	644	423	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				260	1902	1250	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				659	0	513	371	2284	0	0	2795	649
Grp Sat Flow(s),veh/h/ln				1843	0	1569	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.80	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	531	341	3632	0	0	2463	736
V/C Ratio(X)				1.06	0.00	0.97	1.09	0.63	0.00	0.00	1.13	0.88
Avail Cap(c_a), veh/h				624	0	531	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	42.3	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				51.7	0.0	30.5	44.5	0.1	0.0	0.0	66.4	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				28.7	0.0	20.5	13.1	0.0	0.0	0.0	39.8	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				94.7	0.0	72.8	84.4	0.1	0.0	0.0	99.8	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1172			2655			3444	
Approach Delay, s/veh					85.1			11.9			89.3	
Approach LOS					F			B			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2
Green Ext Time (p_c), s		10.4		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1955	30	317	2604	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1955	30	317	2604	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	2058	32	334	2741	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2371	37	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5303	80	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1352	738	334	2741	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1839	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	20.1	20.3	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	20.1	20.3	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	849	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.87	0.87	1.14	0.65	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	849	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.5	3.5	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	0.7	1.2	66.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	1.8	2.1	13.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	4.1	4.7	109.5	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						2090			3075	
Approach Delay, s/veh		52.4						4.3			12.0	
Approach LOS		D						A			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	26.0	64.9	39.1	90.9
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	23.6	22.3	30.9	2.0
Green Ext Time (p_c), s	0.0	6.7	1.1	16.3

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	317	20	487	0	387	0	570	379	90	320	0
Future Volume (veh/h)	300	317	20	487	0	387	0	570	379	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.85	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	341	22	524	0	416	0	613	408	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	496	482	31	0	0	0	0	776	516	295	1924	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.41	0.41	0.06	0.55	0.00
Sat Flow, veh/h	1767	1719	111		0		0	1975	1252	1767	3618	0
Grp Volume(v), veh/h	323	0	363		0.0		0	574	447	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1830				0	1763	1371	1767	1763	0
Q Serve(g_s), s	9.1	0.0	10.0				0.0	16.0	16.0	1.6	2.8	0.0
Cycle Q Clear(g_c), s	9.1	0.0	10.0				0.0	16.0	16.0	1.6	2.8	0.0
Prop In Lane	1.00		0.06				0.00		0.91	1.00		0.00
Lane Grp Cap(c), veh/h	496	0	514				0	727	565	295	1924	0
V/C Ratio(X)	0.65	0.00	0.71				0.00	0.79	0.79	0.33	0.18	0.00
Avail Cap(c_a), veh/h	724	0	750				0	753	586	373	2132	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.9	0.0	18.2				0.0	14.4	14.5	10.9	6.5	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.8				0.0	8.6	10.8	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	4.0				0.0	7.1	5.9	0.5	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	0.0	20.0				0.0	23.0	25.2	11.1	6.7	0.0
LnGrp LOS	B	A	C				A	C	C	B	A	A
Approach Vol, veh/h		686						1021			441	
Approach Delay, s/veh		19.7						24.0			7.6	
Approach LOS		B						C			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	7.5	28.1	20.7	35.7
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	3.6	18.0	12.0	4.8
Green Ext Time (p_c), s	0.0	5.2	2.5	6.4

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	357	178	380	408	20	205	1785	445	0	2194	490
Future Volume (veh/h)	220	357	178	380	408	20	205	1785	445	0	2194	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	203	417	187	283	592	21	216	1879	468	0	2309	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	408	857	329	245	492	17	140	2004	482	0	2087	
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.08	0.99	0.99	0.00	0.41	0.00
Sat Flow, veh/h	1767	3711	1422	1767	3557	126	3428	4055	976	0	5233	1572
Grp Volume(v), veh/h	203	417	187	283	309	304	216	1554	793	0	2309	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1422	1767	1856	1827	1714	1689	1653	0	1689	1572
Q Serve(g_s), s	13.0	12.7	15.1	18.0	18.0	18.0	5.3	8.5	17.2	0.0	53.6	0.0
Cycle Q Clear(g_c), s	13.0	12.7	15.1	18.0	18.0	18.0	5.3	8.5	17.2	0.0	53.6	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.59	0.00		1.00
Lane Grp Cap(c), veh/h	408	857	329	245	257	253	140	1669	817	0	2087	
V/C Ratio(X)	0.50	0.49	0.57	1.16	1.20	1.20	1.55	0.93	0.97	0.00	1.11	
Avail Cap(c_a), veh/h	489	1028	394	245	257	253	140	1669	817	0	2087	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.26	0.26	0.26	0.20	0.20	0.20	0.00	0.71	0.00
Uniform Delay (d), s/veh	43.4	43.3	44.3	56.0	56.0	56.0	59.7	0.4	0.5	0.0	38.2	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.6	82.5	100.2	101.4	252.5	2.7	8.7	0.0	53.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.9	5.4	13.6	15.6	15.4	7.1	0.9	2.2	0.0	31.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	43.5	44.8	138.5	156.2	157.4	312.2	3.1	9.1	0.0	91.7	0.0
LnGrp LOS	D	D	D	F	F	F	F	A	A	A	F	
Approach Vol, veh/h		807			896			2563			2309	A
Approach Delay, s/veh		43.9			151.0			31.0			91.7	
Approach LOS		D			F			C			F	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	70.2	35.9	10.7	59.5	23.9
Change Period (Y+Rc), s	5.9	5.9	5.4	5.9	5.9
Max Green Setting (Gmax), s	58.3	36.0	5.3	47.6	18.0
Max Q Clear Time (g_c+I1), s	19.2	17.1	7.3	55.6	20.0
Green Ext Time (p_c), s	9.3	1.2	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	319	160	183	443	470	200	1672	140	452	1817	203
Future Volume (veh/h)	319	319	160	183	443	470	200	1672	140	452	1817	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	332	332	167	191	461	490	208	1742	146	471	1893	211
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	895	386	171	854	364	258	1839	154	726	2435	269
Arrive On Green	0.10	0.25	0.25	0.10	0.24	0.24	0.08	0.39	0.39	0.42	1.00	1.00
Sat Flow, veh/h	3428	3526	1522	1767	3526	1502	3428	4752	397	3428	4617	510
Grp Volume(v), veh/h	332	332	167	191	461	490	208	1237	651	471	1381	723
Grp Sat Flow(s),veh/h/ln	1714	1763	1522	1767	1763	1502	1714	1689	1772	1714	1689	1750
Q Serve(g_s), s	12.5	10.1	12.0	12.6	14.8	31.5	7.8	46.0	46.3	14.2	0.0	0.0
Cycle Q Clear(g_c), s	12.5	10.1	12.0	12.6	14.8	31.5	7.8	46.0	46.3	14.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	359	895	386	171	854	364	258	1307	686	726	1781	923
V/C Ratio(X)	0.93	0.37	0.43	1.12	0.54	1.35	0.81	0.95	0.95	0.65	0.78	0.78
Avail Cap(c_a), veh/h	359	895	386	171	854	364	282	1343	705	726	1781	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48	0.09	0.09	0.09
Uniform Delay (d), s/veh	57.7	40.0	40.6	58.7	42.9	49.3	59.2	38.5	38.6	33.6	0.0	0.0
Incr Delay (d2), s/veh	28.9	0.1	0.3	103.0	0.4	173.3	6.7	8.6	14.5	0.1	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.4	4.5	10.5	6.5	29.3	3.6	20.1	22.4	4.9	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	40.0	40.9	161.7	43.3	222.6	65.9	47.1	53.1	33.8	0.3	0.6
LnGrp LOS	F	D	D	F	D	F	E	D	D	C	A	A
Approach Vol, veh/h		831			1142			2096			2575	
Approach Delay, s/veh		58.8			140.0			50.9			6.5	
Approach LOS		E			F			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.6	55.2	17.0	37.9	14.2	74.7	18.5	36.4
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	16.2	48.3	14.6	14.0	9.8	2.0	14.5	33.5
Green Ext Time (p_c), s	0.0	2.0	0.0	0.9	0.0	7.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	447	359	10	765	393	120	10	1215	614	120	1702	328
Future Volume (veh/h)	447	359	10	765	393	120	10	1215	614	120	1702	328
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	456	366	10	781	401	122	10	1240	627	122	1737	335
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	421	12	612	437	358	21	1967	595	169	1502	643
Arrive On Green	0.17	0.23	0.23	0.18	0.24	0.24	0.01	0.39	0.39	0.10	0.85	0.85
Sat Flow, veh/h	1767	1796	49	3428	1856	1519	1767	5066	1533	3428	3526	1509
Grp Volume(v), veh/h	456	0	376	781	401	122	10	1240	627	122	1737	335
Grp Sat Flow(s),veh/h/ln	1767	0	1845	1714	1856	1519	1767	1689	1533	1714	1763	1509
Q Serve(g_s), s	22.6	0.0	25.5	23.2	27.4	7.3	0.7	25.8	50.5	4.5	55.4	4.3
Cycle Q Clear(g_c), s	22.6	0.0	25.5	23.2	27.4	7.3	0.7	25.8	50.5	4.5	55.4	4.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	433	612	437	358	21	1967	595	169	1502	643
V/C Ratio(X)	1.48	0.00	0.87	1.28	0.92	0.34	0.49	0.63	1.05	0.72	1.16	0.52
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	1967	595	232	1502	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	0.24	0.24	0.24
Uniform Delay (d), s/veh	53.7	0.0	47.8	53.4	48.5	29.3	63.9	32.2	39.8	57.7	9.6	1.9
Incr Delay (d2), s/veh	234.6	0.0	13.8	134.8	17.7	0.2	6.4	1.5	51.8	0.8	72.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.0	0.0	13.4	21.4	14.8	2.7	0.4	10.7	27.2	1.9	18.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	288.3	0.0	61.7	188.2	66.1	29.5	70.3	33.8	91.5	58.5	82.1	2.6
LnGrp LOS	F	A	E	F	E	C	E	C	F	E	F	A
Approach Vol, veh/h		832			1304			1877			2194	
Approach Delay, s/veh		185.9			135.8			53.2			68.6	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	56.2	27.6	35.4	5.9	61.1	27.5	35.5
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	16.5	52.5	25.2	27.5	2.7	57.4	24.6	29.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5

Intersection Summary		
HCM 6th Ctrl Delay		93.8
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	883	210	650	1118	90	180
Future Volume (veh/h)	883	210	650	1118	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	929	221	684	1177	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	870	207	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2889	664	1767	3618	538	1071
Grp Volume(v), veh/h	585	565	684	1177	285	0
Grp Sat Flow(s),veh/h/ln	1763	1697	1767	1763	1615	0
Q Serve(g_s), s	28.0	28.0	28.5	14.8	15.2	0.0
Cycle Q Clear(g_c), s	28.0	28.0	28.5	14.8	15.2	0.0
Prop In Lane		0.39	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	528	560	2370	344	0
V/C Ratio(X)	1.07	1.07	1.22	0.50	0.83	0.00
Avail Cap(c_a), veh/h	549	528	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	31.0	30.7	7.3	33.8	0.0
Incr Delay (d2), s/veh	49.4	50.9	115.4	0.7	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	18.5	29.5	4.9	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	80.4	81.9	146.1	8.0	41.4	0.0
LnGrp LOS	F	F	F	A	D	A
Approach Vol, veh/h	1150			1861	285	
Approach Delay, s/veh	81.1			58.8	41.4	
Approach LOS	F			E	D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.5	33.4				65.9		24.1
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	30.0				16.8		17.2
Green Ext Time (p_c), s	0.0	0.0				11.4		0.3

Intersection Summary		
HCM 6th Ctrl Delay		65.1
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	12.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	353	1154	30	0	1442
Future Vol, veh/h	0	353	1154	30	0	1442
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	406	1326	34	0	1657

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	700	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 379	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	~ 372	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	107	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	372	-
HCM Lane V/C Ratio	-	-	1.091	-
HCM Control Delay (s)	-	-	107	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	14.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1073	1620	1184	1265	178
Future Volume (veh/h)	0	1073	1620	1184	1265	178
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1095	1653	1208	1291	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1495	1495	1267	1368	
Arrive On Green	0.00	0.42	0.42	0.42	0.40	0.00
Sat Flow, veh/h	0	3711	3618	1509	3428	1572
Grp Volume(v), veh/h	0	1095	1653	1208	1291	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1509	1714	1572
Q Serve(g_s), s	0.0	15.5	25.4	25.4	21.7	0.0
Cycle Q Clear(g_c), s	0.0	15.5	25.4	25.4	21.7	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1495	1495	1267	1368	
V/C Ratio(X)	0.00	0.73	1.11	0.95	0.94	
Avail Cap(c_a), veh/h	0	1495	1495	1267	1374	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	14.4	17.2	3.2	17.4	0.0
Incr Delay (d2), s/veh	0.0	1.9	57.9	15.4	13.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	20.7	22.0	9.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	16.3	75.1	18.6	30.5	0.0
LnGrp LOS	A	B	F	B	C	
Approach Vol, veh/h		1095	2861		1291	A
Approach Delay, s/veh		16.3	51.3		30.5	
Approach LOS		B	D		C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		29.1		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		17.5		23.7		27.4
Green Ext Time (p_c), s		4.4		0.1		0.0

Intersection Summary			
HCM 6th Ctrl Delay			38.8
HCM 6th LOS			D

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	0	0	0	145	1330	0	0	1161	170
Future Volume (veh/h)	30	0	50	0	0	0	145	1330	0	0	1161	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	0	0	0	171	1565	0	0	1366	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	159	25	133	153	263	0	216	3238	0	4	1878	275
Arrive On Green	0.14	0.00	0.14	0.00	0.00	0.00	0.12	0.64	0.00	0.00	0.42	0.42
Sat Flow, veh/h	383	174	940	1333	1856	0	1767	5233	0	1767	4435	649
Grp Volume(v), veh/h	94	0	0	0	0	0	171	1565	0	0	1040	526
Grp Sat Flow(s),veh/h/ln	1497	0	0	1333	1856	0	1767	1689	0	1767	1689	1707
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	4.4	7.6	0.0	0.0	12.1	12.1
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.0	0.0	0.0	4.4	7.6	0.0	0.0	12.1	12.1
Prop In Lane	0.37		0.63	1.00		0.00	1.00		0.00	1.00		0.38
Lane Grp Cap(c), veh/h	317	0	0	153	263	0	216	3238	0	4	1430	723
V/C Ratio(X)	0.30	0.00	0.00	0.00	0.00	0.00	0.79	0.48	0.00	0.00	0.73	0.73
Avail Cap(c_a), veh/h	1099	0	0	873	1264	0	252	3238	0	286	1553	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	0.0	0.0	0.0	0.0	20.0	4.4	0.0	0.0	11.3	11.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	11.6	0.1	0.0	0.0	1.7	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.0	0.0	0.0	2.3	1.4	0.0	0.0	3.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.0	0.0	0.0	0.0	0.0	31.6	4.6	0.0	0.0	13.0	14.6
LnGrp LOS	B	A	A	A	A	A	C	A	A	A	B	B
Approach Vol, veh/h		94			0			1736			1566	
Approach Delay, s/veh		18.6			0.0			7.2			13.5	
Approach LOS		B						A			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	0.0	35.4	11.5	10.1	25.3	11.5
Change Period (Y+Rc), s	4.4	* 5.4	4.9	4.4	5.4	4.9
Max Green Setting (Gmax), s	7.6	* 21	32.0	6.7	21.6	32.0
Max Q Clear Time (g_c+I1), s	0.0	9.6	4.6	6.4	14.1	0.0
Green Ext Time (p_c), s	0.0	8.7	0.3	0.0	5.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	303.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	526	874	1410	1131	20
Future Vol, veh/h	0	526	874	1410	1131	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	584	971	1567	1257	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	660	1289	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 346	~ 281	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 339	~ 278	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	$ 365		$ 443		0
HCM LOS	F				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 278	-	339	-	-
HCM Lane V/C Ratio	3.493	-	1.724	-	-
HCM Control Delay (s)	$ 1157.8	-	$ 365	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	90.7	-	36.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Intersection	
Int Delay, s/veh	20

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	191	0	2512	2336	234
Future Vol, veh/h	0	191	0	2512	2336	234
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	220	0	2887	2685	269

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1497	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 111	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 109	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 552.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	109	-	-
HCM Lane V/C Ratio	-	2.014	-	-
HCM Control Delay (s)	-	$ 552.6	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	18.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	20	30	20	30	10	420	2413	260	153	2105	272
Future Volume (veh/h)	56	20	30	20	30	10	420	2413	260	153	2105	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.69	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	22	33	22	33	11	467	2681	289	170	2339	302
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	75	658	558	31	612	358	272	1254	520	139	904	113
Arrive On Green	0.04	0.35	0.35	0.02	0.33	0.33	0.15	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1085	1767	3526	1460	1767	3131	393
Grp Volume(v), veh/h	62	22	33	22	33	11	467	2681	289	170	1287	1354
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1085	1767	1763	1460	1767	1763	1761
Q Serve(g_s), s	4.2	0.9	1.7	1.5	1.5	0.8	18.6	43.0	19.2	9.5	34.9	34.9
Cycle Q Clear(g_c), s	4.2	0.9	1.7	1.5	1.5	0.8	18.6	43.0	19.2	9.5	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	75	658	558	31	612	358	272	1254	520	139	509	508
V/C Ratio(X)	0.83	0.03	0.06	0.72	0.05	0.03	1.72	2.14	0.56	1.22	2.53	2.66
Avail Cap(c_a), veh/h	75	658	558	85	614	359	272	1254	520	139	509	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	25.5	25.7	59.1	27.6	27.4	51.1	38.9	31.3	55.7	43.0	43.0
Incr Delay (d2), s/veh	49.7	0.0	0.0	11.2	0.0	0.0	337.9	514.6	1.5	148.8	693.4	754.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.4	0.6	0.8	0.7	0.2	33.7	107.9	7.0	10.0	113.0	121.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.1	25.5	25.7	70.3	27.6	27.4	389.1	553.6	32.8	204.5	736.4	797.5
LnGrp LOS	F	C	C	E	C	C	F	F	C	F	F	F
Approach Vol, veh/h		117			66			3437			2811	
Approach Delay, s/veh		68.8			41.8			487.4			733.6	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.7	6.5	47.8	23.0	43.6	9.5	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	11.5	45.0	3.5	3.7	20.6	36.9	6.2	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	582.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2626.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2245	2527	3093	2025	130
Future Vol, veh/h	0	2245	2527	3093	2025	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2440	2747	3362	2201	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1121	2352	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 199	~ 202	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 195	~ 200	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 5224.7	$ 2595.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 200	-	195	-	-
HCM Lane V/C Ratio	13.734	-	12.514	-	-
HCM Control Delay (s)	$ 5772.5	-	$ 5224.7	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	321.5	-	283.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	169	430	300	10	423	110	270	5	50	10
Future Volume (veh/h)	5	80	169	430	300	10	423	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	219	558	390	13	549	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	204	429	376	716	24	423	86	212	85	635	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	507	1068	1036	1781	59	762	198	487	48	1460	276
Grp Volume(v), veh/h	6	0	323	558	0	403	1043	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1576	1036	0	1841	1448	0	0	1784	0	0
Q Serve(g_s), s	0.3	0.0	9.3	14.8	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	9.3	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.03	0.53		0.34	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	633	376	0	739	721	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.51	1.48	0.00	0.55	1.45	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	633	376	0	739	721	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.5	24.9	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.1	231.3	0.0	0.9	208.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.1	29.3	0.0	3.8	51.1	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.6	256.3	0.0	14.6	226.9	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		329			961			1043			84	
Approach Delay, s/veh		14.7			154.9			226.9			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		31.0		29.0		31.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		24.1		26.1		24.1		26.1				
Max Q Clear Time (g_c+I1), s		12.3		3.7		26.1		28.1				
Green Ext Time (p_c), s		2.4		0.3		0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	161.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	936	513	50	0	329	390
Future Volume (veh/h)	0	0	20	40	390	370	936	513	50	0	329	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	1156	633	62	0	406	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	117	0	0	0	336	398
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	0	0	0	760	901
Grp Volume(v), veh/h	0	0	25	987	0	0	1851	0	0	0	0	887
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	0	0	0	0	0	1661
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.62		0.03	0.00		0.54
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	117	0	0	0	0	734
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	15.83	0.00	0.00	0.00	0.00	1.21
Avail Cap(c_a), veh/h	0	0	569	676	0	0	117	0	0	0	0	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	25.0	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	6687.7	0.0	0.0	0.0	0.0	106.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	218.6	0.0	0.0	0.0	0.0	28.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	6712.7	0.0	0.0	0.0	0.0	120.1
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			1851			887	
Approach Delay, s/veh		10.4			232.0			6712.7			120.1	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0	23.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	24.1	2.5	24.1	20.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	3402.9
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	516.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	1315	0	951	109	0
Future Vol, veh/h	450	1315	0	951	109	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1565	0	1132	130	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	588.4	440.8	13.7
HCM LOS	F	F	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	951	450	1315	109
LT Vol	0	450	0	0
Through Vol	951	0	0	109
RT Vol	0	0	1315	0
Lane Flow Rate	1132	536	1565	130
Geometry Grp	2	7	7	2
Degree of Util (X)	1.933	1.078	2.63	0.254
Departure Headway (Hd)	5.964	9.026	7.785	8.029
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	623	407	485	450
Service Time	3.964	6.726	5.485	6.029
HCM Lane V/C Ratio	1.817	1.317	3.227	0.289
HCM Control Delay	440.8	97.7	756.3	13.7
HCM Lane LOS	F	F	F	B
HCM 95th-tile Q	76.1	14.8	98.8	1

Intersection	
Intersection Delay, s/veh	464.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	1162	39	50	5	909	5	153	5	5	5
Future Vol, veh/h	5	300	1162	39	50	5	909	5	153	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	1320	44	57	6	1033	6	174	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	460.5	16.9	516.5	14.1
HCM LOS	F	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	85%	2%	0%	41%	33%
Vol Thru, %	0%	98%	0%	53%	33%
Vol Right, %	14%	0%	100%	5%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1067	305	1162	94	15
LT Vol	909	5	0	39	5
Through Vol	5	300	0	50	5
RT Vol	153	0	1162	5	5
Lane Flow Rate	1212	347	1320	107	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	2.096	0.65	2.218	0.215	0.035
Departure Headway (Hd)	7.083	9.166	8.429	10.919	10.711
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	521	399	449	331	336
Service Time	5.083	6.866	6.129	8.919	8.711
HCM Lane V/C Ratio	2.326	0.87	2.94	0.323	0.051
HCM Control Delay	516.5	27.4	574.2	16.9	14.1
HCM Lane LOS	F	D	F	C	B
HCM 95th-tile Q	75	4.4	70.1	0.8	0.1

Intersection	
Intersection Delay, s/veh	335.6
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	972	230	976
Future Vol, veh/h	95	100	80	972	230	976
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	1013	240	1017
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	14.4	346.2	378.2
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	8%	100%	0%	0%
Vol Thru, %	92%	0%	0%	19%
Vol Right, %	0%	0%	100%	81%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1052	95	100	1206
LT Vol	80	95	0	0
Through Vol	972	0	0	230
RT Vol	0	0	100	976
Lane Flow Rate	1096	99	104	1256
Geometry Grp	2	7	7	2
Degree of Util (X)	1.715	0.223	0.2	1.792
Departure Headway (Hd)	6.505	9.861	8.596	5.913
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	366	421	628
Service Time	4.505	7.561	6.296	3.913
HCM Lane V/C Ratio	1.923	0.27	0.247	2
HCM Control Delay	346.2	15.4	13.4	378.2
HCM Lane LOS	F	C	B	F
HCM 95th-tile Q	55.8	0.8	0.7	66.4

Intersection	
Intersection Delay, s/veh	189.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	19	972	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	19	972	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	21	1092	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	265.3	12.7	23.1
HCM LOS	-	F	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	9%
Vol Thru, %	100%	0%	100%	2%	91%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	1001	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	19	300
RT Vol	0	40	0	972	0
Lane Flow Rate	90	45	0	1125	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.18	0.081	0	1.542	0.643
Departure Headway (Hd)	8.681	7.952	7.712	4.935	7.51
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	416	453	0	742	486
Service Time	6.381	5.652	5.712	2.979	5.51
HCM Lane V/C Ratio	0.216	0.099	0	1.516	0.763
HCM Control Delay	13.3	11.4	10.7	265.3	23.1
HCM Lane LOS	B	B	N	F	C
HCM 95th-tile Q	0.6	0.3	0	56.4	4.5

Intersection	
Intersection Delay, s/veh	51.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	193	180	150	0	0	0	90	60	160	320	170	19
Future Vol, veh/h	193	180	150	0	0	0	90	60	160	320	170	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	201	188	156	0	0	0	94	63	167	333	177	20
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	60	20	61.5
HCM LOS	F	C	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	37%	63%
Vol Thru, %	19%	34%	33%
Vol Right, %	52%	29%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	523	509
LT Vol	90	193	320
Through Vol	60	180	170
RT Vol	160	150	19
Lane Flow Rate	323	545	530
Geometry Grp	1	1	1
Degree of Util (X)	0.609	0.984	0.986
Departure Headway (Hd)	6.79	6.499	6.694
Convergence, Y/N	Yes	Yes	Yes
Cap	530	556	541
Service Time	4.869	4.556	4.762
HCM Lane V/C Ratio	0.609	0.98	0.98
HCM Control Delay	20	60	61.5
HCM Lane LOS	C	F	F
HCM 95th-tile Q	4	13.7	13.6

Year 2050B + P4 AM

29: Washington St & San Diego Ave

Old Town Complex

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	983	0	0	985	680
Future Volume (veh/h)	0	0	0	200	370	80	300	983	0	0	985	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	1035	0	0	1037	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	1035	0	0	1037	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	19.5	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	19.5	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.43	0.00	0.00	0.67	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.66	0.66	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	18.5	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.5	0.4	0.0	0.0	2.3	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	7.9	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.4	0.4	0.0	0.0	20.8	74.2
LnGrp LOS				C	C	C	C	A	A	A	C	F
Approach Vol, veh/h					684			1351			1753	
Approach Delay, s/veh					31.5			6.0			42.6	
Approach LOS					C			A			D	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9
Green Ext Time (p_c), s		12.0			0.0	0.0		2.4

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B + P4 AM

30: Washington St & Hancock St

Old Town Complex

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	683	160	460	725	0
Future Volume (veh/h)	600	380	240	0	0	0	0	683	160	460	725	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	704	165	474	747	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	704	165	474	747	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	16.6	7.8	11.3	11.5	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	16.6	7.8	11.3	11.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.62	0.33	0.85	0.43	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.92	0.92	0.80	0.80	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	19.8	17.2	34.2	8.3	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	2.3	1.7	6.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	5.5	2.3	5.0	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	22.1	18.9	40.2	8.9	0.0
LnGrp LOS	C	C	C				A	C	B	D	A	A
Approach Vol, veh/h		1258						869			1221	
Approach Delay, s/veh		31.3						21.5			21.0	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1
Max Q Clear Time (g_c+I1), s	13.3	18.6		18.6		13.5
Green Ext Time (p_c), s	0.4	3.6		2.5		6.7

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	643	0	0	720	245
Future Volume (veh/h)	30	0	70	60	50	170	140	643	0	0	720	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	670	0	0	750	255
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	287	175	1503	0	0	1038	449
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.37	0.37
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	670	0	0	750	255
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	10.0	0.0	0.0	15.7	11.5
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	10.0	0.0	0.0	15.7	11.5
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	93	0	0	342	359	287	175	1503	0	0	1038	449
V/C Ratio(X)	1.11	0.00	0.00	0.18	0.15	0.62	0.83	0.45	0.00	0.00	0.72	0.57
Avail Cap(c_a), veh/h	93	0	0	670	703	563	175	1876	0	0	1395	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	0.0	23.1	23.0	25.3	30.3	9.8	0.0	0.0	18.7	17.3
Incr Delay (d2), s/veh	126.8	0.0	0.0	0.1	0.1	0.8	28.2	0.1	0.0	0.0	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	0.8	0.7	2.6	3.6	2.7	0.0	0.0	4.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	159.1	0.0	0.0	23.2	23.0	26.1	58.5	9.9	0.0	0.0	20.1	18.7
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			816			1005	
Approach Delay, s/veh		159.1			25.0			18.6			19.7	
Approach LOS		F			C			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		40.9		8.0	11.3	29.6		19.7				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		12.0		6.0	7.6	17.7		9.5				
Green Ext Time (p_c), s		3.4		0.0	0.0	6.6		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		26.5
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	403	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	496	0	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	959	0	743				0	650	86	288	551	0
Arrive On Green	0.27	0.00	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	496	0	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	0	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	4.8	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	4.8	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	959	0	743				0	369	367	288	551	0
V/C Ratio(X)	0.52	0.00	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	2542	0	1426				0	606	602	312	597	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0				0.0	0.7	0.7	6.2	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	5.9				0.0	15.4	15.5	22.2	16.5	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		585						478			489	
Approach Delay, s/veh		11.7						15.5			18.8	
Approach LOS		B						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				12.5		17.3		10.9				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				7.1		6.8		6.3				
Green Ext Time (p_c), s				1.1		1.1		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		15.1
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Year 2050B + P4 AM | Old Town Complex
33: Pacific Hwy & Sassafras St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	159	250	523	100	113	587	140
Future Volume (veh/h)	90	200	100	410	700	159	250	523	100	113	587	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	183	287	601	115	130	675	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	527	524	182	497	113	125	1030	193	127	1051	246
Arrive On Green	0.05	0.34	0.34	0.12	0.41	0.41	0.07	0.24	0.24	0.09	0.26	0.26
Sat Flow, veh/h	1767	1537	1530	1464	1206	274	1767	4241	794	1464	4061	951
Grp Volume(v), veh/h	103	230	115	471	0	988	287	476	240	130	559	277
Grp Sat Flow(s),veh/h/ln	1767	1537	1530	1464	0	1480	1767	1689	1658	1464	1689	1635
Q Serve(g_s), s	5.1	10.8	5.0	11.6	0.0	38.5	6.6	11.6	12.0	8.1	13.7	14.1
Cycle Q Clear(g_c), s	5.1	10.8	5.0	11.6	0.0	38.5	6.6	11.6	12.0	8.1	13.7	14.1
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.48	1.00		0.58
Lane Grp Cap(c), veh/h	97	527	524	182	0	610	125	820	402	127	874	423
V/C Ratio(X)	1.07	0.44	0.22	2.59	0.00	1.62	2.30	0.58	0.60	1.02	0.64	0.65
Avail Cap(c_a), veh/h	97	527	524	182	0	610	125	1060	520	127	1114	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	23.7	21.8	40.9	0.0	27.4	43.4	31.2	31.3	42.6	30.7	30.9
Incr Delay (d2), s/veh	110.9	0.2	0.1	731.0	0.0	286.1	608.3	1.2	2.6	86.3	1.4	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.9	1.8	41.1	0.0	61.3	24.0	4.8	5.0	5.9	5.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.0	23.9	21.9	771.9	0.0	313.6	651.7	32.4	33.9	128.9	32.1	34.0
LnGrp LOS	F	C	C	F	A	F	F	C	C	F	C	C
Approach Vol, veh/h		448			1459			1003			966	
Approach Delay, s/veh		53.5			461.5			210.0			45.7	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	28.0	16.0	36.9	11.0	29.5	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	10.1	14.0	13.6	12.8	8.6	16.1	7.1	40.5
Green Ext Time (p_c), s	0.0	6.5	0.0	1.0	0.0	7.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	245.6
HCM 6th LOS	F

Year 2050B + P4 AM | Old Town Complex
34: Pacific Hwy & Laurel St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	571	1140	100	80	1410	100	250	432	90	110	349	968
Future Volume (veh/h)	571	1140	100	80	1410	100	250	432	90	110	349	968
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	583	1163	102	82	1439	102	255	441	92	112	356	988
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1088	77	134	1009	204	134	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.24	0.24	0.08	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3333	235	1767	4198	847	1767	5066	1520
Grp Volume(v), veh/h	583	626	639	82	758	783	255	352	181	112	356	988
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1805	1767	1689	1669	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	12.4	13.0	8.8	8.0	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	12.4	13.0	8.8	8.0	33.7
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	589	134	812	401	134	1219	710
V/C Ratio(X)	1.51	0.73	0.73	0.80	1.32	1.33	1.91	0.43	0.45	0.83	0.29	1.39
Avail Cap(c_a), veh/h	386	859	875	121	575	589	134	812	401	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	45.1	45.3	63.8	43.4	38.1
Incr Delay (d2), s/veh	242.3	3.5	3.5	23.2	154.6	159.6	434.2	1.7	3.6	19.2	0.6	185.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	39.6	17.4	17.8	3.6	44.6	46.5	20.9	5.4	5.8	4.7	3.5	60.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	297.0	32.0	32.0	88.4	201.7	206.7	498.9	46.8	49.0	83.0	44.0	223.2
LnGrp LOS	F	C	C	F	F	F	F	D	D	F	D	F
Approach Vol, veh/h		1848			1623			788			1456	
Approach Delay, s/veh		115.6			198.4			193.6			168.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	39.0	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.8	15.0	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.8	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	163.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

35: Harbor Dr & Laurel St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1422	2530	2930	99	93	100
Future Volume (veh/h)	1422	2530	2930	99	93	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1529	2720	3151	0	100	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4176	2755		153	136
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1529	2720	3151	0	100	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	6.5	7.9
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	6.5	7.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4176	2755		153	136
V/C Ratio(X)	1.83	0.65	1.14		0.65	0.79
Avail Cap(c_a), veh/h	834	4176	2755		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	52.2	52.8
Incr Delay (d2), s/veh	379.8	0.8	69.6	0.0	1.8	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	56.1	6.0	42.1	0.0	2.9	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	424.5	4.7	96.5	0.0	53.9	56.7
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4249	3151	A	208	
Approach Delay, s/veh		155.8	96.5		55.4	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		9.9	30.7	66.2
Green Ext Time (p_c), s		51.0		0.3	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		128.5
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	89	120	240	183	283	260	1180	169	298	790	240
Future Volume (veh/h)	90	89	120	240	183	283	260	1180	169	298	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	93	125	250	191	295	271	1229	176	310	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	419	342	79	419	339	345	1027	146	316	1447	714
Arrive On Green	0.04	0.23	0.23	0.04	0.23	0.23	0.10	0.33	0.33	0.18	0.41	0.41
Sat Flow, veh/h	3428	1856	1514	1767	1856	1502	3428	3088	440	1767	3526	1570
Grp Volume(v), veh/h	94	93	125	250	191	295	271	699	706	310	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1514	1767	1856	1502	1714	1763	1765	1767	1763	1570
Q Serve(g_s), s	2.4	3.7	6.2	4.0	8.0	17.0	6.9	29.8	29.8	15.7	16.1	9.3
Cycle Q Clear(g_c), s	2.4	3.7	6.2	4.0	8.0	17.0	6.9	29.8	29.8	15.7	16.1	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	153	419	342	79	419	339	345	586	587	316	1447	714
V/C Ratio(X)	0.62	0.22	0.37	3.17	0.46	0.87	0.78	1.19	1.20	0.98	0.57	0.35
Avail Cap(c_a), veh/h	184	642	524	79	617	499	425	586	587	316	1447	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	28.3	29.3	42.8	29.9	33.4	39.3	29.9	29.9	36.7	20.3	15.8
Incr Delay (d2), s/veh	1.9	0.3	0.7	1008.5	0.3	7.8	6.0	102.5	107.1	45.6	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.6	2.2	23.8	3.4	6.5	3.1	28.3	29.1	10.4	6.2	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	28.6	29.9	1051.3	30.2	41.2	45.3	132.4	137.0	82.3	21.0	16.3
LnGrp LOS	D	C	C	F	C	D	D	F	F	F	C	B
Approach Vol, veh/h		312			736			1676			1383	
Approach Delay, s/veh		33.8			381.5			120.3			33.9	
Approach LOS		C			F			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	35.1	8.4	25.7	13.4	42.1	8.4	25.7
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	17.7	31.8	6.0	8.2	8.9	18.1	4.4	19.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.1	8.3	0.0	0.9

Intersection Summary			
HCM 6th Ctrl Delay			131.4
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑					↰		↱
Traffic Volume (veh/h)	0	1466	100	370	429	0	0	0	0	190	0	899
Future Volume (veh/h)	0	1466	100	370	429	0	0	0	0	190	0	899
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1593	109	402	466	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1593	109	402	466	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	34.2	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	34.2	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.69	0.11	1.19	0.17	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.59	0.59	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.1	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	103.0	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.0	1.0	9.3	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.2	7.7	151.2	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1702			868						207	A
Approach Delay, s/veh		12.9			70.1						55.5	
Approach LOS		B			E						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5						
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0						
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0						
Max Q Clear Time (g_c+I1), s	13.8	36.2		15.8		2.0						
Green Ext Time (p_c), s	0.0	3.8		0.1		2.1						
Intersection Summary												
HCM 6th Ctrl Delay			33.9									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↱			↰↑	↱			
Traffic Volume (veh/h)	1073	583	0	0	499	310	300	10	440	0	0	0
Future Volume (veh/h)	1073	583	0	0	499	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1118	607	0	0	520	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1198	2365	0	0	565	350	420	13	385			
Arrive On Green	0.58	1.00	0.00	0.00	0.28	0.28	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2143	1271	1715	55	1572			
Grp Volume(v), veh/h	1118	607	0	0	447	396	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1559	1770	0	1572			
Q Serve(g_s), s	35.8	0.0	0.0	0.0	29.5	29.6	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	35.8	0.0	0.0	0.0	29.5	29.6	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.82	0.97		1.00			
Lane Grp Cap(c), veh/h	1198	2365	0	0	486	429	434	0	385			
V/C Ratio(X)	0.93	0.26	0.00	0.00	0.92	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1198	2365	0	0	521	461	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.7	0.0	0.0	0.0	42.2	42.2	41.8	0.0	45.3			
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.0	25.1	27.8	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.9	0.0	0.0	0.0	16.0	14.5	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	0.0	0.0	67.3	70.0	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1725			843			780				
Approach Delay, s/veh		16.4			68.5			109.8				
Approach LOS		B			E			F				
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		86.0		34.0	47.4	38.6						
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5						
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36						
Max Q Clear Time (g_c+I1), s		2.0		31.4	37.8	31.6						
Green Ext Time (p_c), s		2.9		0.0	1.5	1.4						
Intersection Summary												
HCM 6th Ctrl Delay			51.3									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	768	10	1123	1075	0	419
Future Volume (veh/h)	768	10	1123	1075	0	419
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	836	0	1208	0	0	451
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	955	435	1663		0	1663
Arrive On Green	0.27	0.00	0.47	0.00	0.00	0.47
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	836	0	1208	0	0	451
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	12.4	0.0	15.1	0.0	0.0	4.3
Cycle Q Clear(g_c), s	12.4	0.0	15.1	0.0	0.0	4.3
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	955	435	1663		0	1663
V/C Ratio(X)	0.88	0.00	0.73		0.00	0.27
Avail Cap(c_a), veh/h	983	448	1663		0	1663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	11.7	0.0	0.0	8.8
Incr Delay (d2), s/veh	8.9	0.0	2.8	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	5.4	0.0	0.0	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.1	0.0	14.5	0.0	0.0	9.2
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	836		1208	A		451
Approach Delay, s/veh	28.1		14.5			9.2
Approach LOS	C		B			A

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		31.4				31.4		23.6
Change Period (Y+Rc), s		5.5				* 5.5		8.7
Max Green Setting (Gmax), s		25.5				* 26		15.3
Max Q Clear Time (g_c+I1), s		17.1				6.3		14.4
Green Ext Time (p_c), s		5.9				4.7		0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	853
Future Volume (vph)	290	560	120	90	270	853
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	948

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	948
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	948
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.84
Capacity (veh/h)	552	608	598	547	1114
Control Delay (s)	16.9	68.7	12.4	16.8	20.5
Approach Delay (s)	51.0		12.4	19.6	
Approach LOS	F		B	C	

Intersection Summary			
Delay	31.1		
Level of Service	D		
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	917	560	713	260	290	40
Future Volume (veh/h)	917	560	713	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	986	602	767	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	778	1390	929		398	875
Arrive On Green	0.44	0.75	0.26	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	986	602	767	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	40.8	11.2	19.0	0.0	8.2	1.2
Cycle Q Clear(g_c), s	40.8	11.2	19.0	0.0	8.2	1.2
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	778	1390	929		398	875
V/C Ratio(X)	1.27	0.43	0.83		0.78	0.05
Avail Cap(c_a), veh/h	778	1512	1160		814	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	4.3	32.1	0.0	39.8	9.4
Incr Delay (d2), s/veh	130.4	0.1	3.3	0.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	44.2	3.2	8.3	0.0	3.5	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	156.3	4.4	35.4	0.0	41.1	9.4
LnGrp LOS	F	A	D		D	A
Approach Vol, veh/h		1588	767	A	355	
Approach Delay, s/veh		98.7	35.4		37.3	
Approach LOS		F	D		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.4		17.3	45.0	30.4
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		13.2		10.2	42.8	21.0
Green Ext Time (p_c), s		2.8		0.6	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	72.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	554	0	0	20	731	1167	5	10	613	100
Future Volume (veh/h)	330	30	554	0	0	20	731	1167	5	10	613	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	616				812	1297	6	11	681	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	824	0	891				1187	2137	10	19	760	124
Arrive On Green	0.23	0.00	0.23				0.69	1.00	1.00	0.01	0.25	0.25
Sat Flow, veh/h	3534	0	1488				3428	3598	17	1767	3008	490
Grp Volume(v), veh/h	391	0	616				812	635	668	11	399	393
Grp Sat Flow(s),veh/h/ln	1767	0	1488				1714	1763	1852	1767	1763	1735
Q Serve(g_s), s	8.6	0.0	0.0				12.4	0.0	0.0	0.6	19.7	19.7
Cycle Q Clear(g_c), s	8.6	0.0	0.0				12.4	0.0	0.0	0.6	19.7	19.7
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.28
Lane Grp Cap(c), veh/h	824	0	891				1187	1047	1100	19	446	438
V/C Ratio(X)	0.47	0.00	0.69				0.68	0.61	0.61	0.58	0.89	0.90
Avail Cap(c_a), veh/h	1178	0	1041				1187	1047	1100	100	460	453
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	13.1				11.0	0.0	0.0	44.3	32.5	32.5
Incr Delay (d2), s/veh	0.7	0.0	2.1				0.1	0.2	0.2	10.1	23.1	23.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	15.9				2.9	0.1	0.1	0.3	11.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	15.2				11.1	0.2	0.2	54.4	55.6	56.1
LnGrp LOS	C	A	B				B	A	A	D	E	E
Approach Vol, veh/h		1007						2115			803	
Approach Delay, s/veh		21.1						4.4			55.8	
Approach LOS		C						A			E	

Timer - Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.4	58.4		26.3	36.1	27.7		
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9		
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24		
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.6	14.4	21.7		
Green Ext Time (p_c), s	0.0	13.7		7.3	1.3	1.0		

Intersection Summary		
HCM 6th Ctrl Delay		19.2
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	128	10	310	10	1558	137	270	907	20
Future Volume (veh/h)	20	10	10	128	10	310	10	1558	137	270	907	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.96	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	133	10	323	10	1623	143	281	945	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	204	97	78	177	25	340	17	1617	142	287	1766	39
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.01	0.34	0.34	0.16	0.50	0.50
Sat Flow, veh/h	434	292	234	380	74	1027	1767	4711	414	1767	3522	78
Grp Volume(v), veh/h	41	0	0	466	0	0	10	1163	603	281	473	493
Grp Sat Flow(s),veh/h/ln	961	0	0	1482	0	0	1767	1689	1748	1767	1763	1837
Q Serve(g_s), s	0.0	0.0	0.0	24.8	0.0	0.0	0.5	30.9	30.9	14.3	16.5	16.5
Cycle Q Clear(g_c), s	1.4	0.0	0.0	27.6	0.0	0.0	0.5	30.9	30.9	14.3	16.5	16.5
Prop In Lane	0.51		0.24	0.29		0.69	1.00		0.24	1.00		0.04
Lane Grp Cap(c), veh/h	378	0	0	542	0	0	17	1159	600	287	884	921
V/C Ratio(X)	0.11	0.00	0.00	0.86	0.00	0.00	0.58	1.00	1.01	0.98	0.54	0.54
Avail Cap(c_a), veh/h	386	0	0	550	0	0	100	1159	600	287	884	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.21	0.21	0.21	0.66	0.66	0.66
Uniform Delay (d), s/veh	20.6	0.0	0.0	29.3	0.0	0.0	44.4	29.5	29.6	37.5	15.3	15.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	12.3	0.0	0.0	2.3	12.8	18.1	37.4	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	11.3	0.0	0.0	0.2	14.0	15.4	9.0	6.6	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	0.0	0.0	41.6	0.0	0.0	46.7	42.3	47.7	74.9	16.8	16.8
LnGrp LOS	C	A	A	D	A	A	D	F	F	E	B	B
Approach Vol, veh/h		41			466			1776			1247	
Approach Delay, s/veh		20.7			41.6			44.2			29.9	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.5	35.8		34.7	5.3	50.0		34.7
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	14.6	* 31		30.3	5.1	40.4		30.3
Max Q Clear Time (g_c+I1), s	16.3	32.9		3.4	2.5	18.5		29.6
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	8.6		0.2

Intersection Summary		
HCM 6th Ctrl Delay		38.5
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1375	190	200	895	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1375	190	200	895	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1432	198	208	932	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1417	196	161	1590	0	468	0	411	0	496	0
Arrive On Green	0.00	0.41	0.41	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3592	478	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	1100	530	208	932	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1280	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	25.1	25.1	5.6	13.2	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	25.1	25.1	5.6	13.2	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Prop In Lane	0.00		0.37	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1089	524	161	1590	0	468	0	411	0	496	0
V/C Ratio(X)	0.00	1.01	1.01	1.29	0.59	0.00	0.49	0.00	0.84	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1089	524	161	1590	0	761	0	755	0	939	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.1	18.1	27.8	8.4	0.0	19.9	0.0	21.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	29.7	42.2	168.1	0.4	0.0	0.3	0.0	1.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.1	12.5	9.8	3.2	0.0	2.7	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.8	60.3	195.9	8.8	0.0	20.2	0.0	22.9	0.0	0.0	0.0
LnGrp LOS	A	F	F	F	A	A	C	A	C	A	A	A
Approach Vol, veh/h		1630			1140			573			0	
Approach Delay, s/veh		51.9			42.9			21.9			0.0	
Approach LOS		D			D			C				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	30.0	21.3	40.0	21.3
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	7.6	27.1	0.0	15.2	14.9
Green Ext Time (p_c), s	0.0	0.0	0.0	4.6	1.4

Intersection Summary	
HCM 6th Ctrl Delay	43.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	640	190	725	390	100	260	583	885	200	750	200
Future Volume (veh/h)	248	640	190	725	390	100	260	583	885	200	750	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	264	681	202	771	415	106	277	620	941	213	798	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	264	681	202	771	415	106	277	620	941	213	798	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	19.8	36.8	16.0	26.8	16.1
Cycle Q Clear(g_c), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	19.8	36.8	16.0	26.8	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	1.64	0.88	0.40	2.14	0.89	0.29	1.37	0.62	1.92	1.24	0.77	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	44.7	28.8	56.1	41.8	33.0	57.3	40.3	38.2	56.7	41.8	38.0
Incr Delay (d2), s/veh	314.0	11.6	0.6	521.3	17.5	0.2	195.3	1.2	421.0	147.2	3.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	11.7	4.7	32.0	14.8	2.5	17.6	8.8	72.6	12.5	11.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	372.8	56.4	29.4	577.4	59.2	33.2	252.6	41.4	459.2	203.9	45.1	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1147			1292			1838			1224	
Approach Delay, s/veh		124.5			366.3			287.1			71.6	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	32.4	16.8	28.8	13.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	2.8	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	223.8
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	74.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	1048	610	290
Future Vol, veh/h	120	70	200	1048	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1127	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1826	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 75	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	314	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 51	357	691	-	-	-
Mov Cap-2 Maneuver	~ 51	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	311	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 898.4	2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	75	-	-
HCM Lane V/C Ratio	0.311	-	2.724	-	-
HCM Control Delay (s)	12.5	-	$ 898.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	20	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	436	370	2501	0	0	2733	470
Future Volume (veh/h)	0	0	0	140	660	436	370	2501	0	0	2733	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	525	446	3013	0	0	3293	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				104	492	338	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				377	1787	1231	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				824	0	665	446	3013	0	0	3293	566
Grp Sat Flow(s),veh/h/ln				1837	0	1558	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.20		0.79	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	428	150	3362	0	0	2792	836
V/C Ratio(X)				1.63	0.00	1.55	2.97	0.90	0.00	0.00	1.18	0.68
Avail Cap(c_a), veh/h				505	0	428	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				293.4	0.0	259.2	887.7	0.4	0.0	0.0	84.7	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				61.6	0.0	48.2	42.6	0.1	0.0	0.0	56.8	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				351.4	0.0	317.2	954.1	0.4	0.0	0.0	120.6	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1489			3459			3859	
Approach Delay, s/veh					336.2			123.4			107.3	
Approach LOS					F			F			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2
Green Ext Time (p_c), s		22.1		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.3
HCM 6th LOS	F

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↑	↱					↑↑↑↱		↰	↑↑↑↑	
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2441	40	296	2457	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2441	40	296	2457	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2516	41	305	2533	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2627	43	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5299	83	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1653	904	305	2533	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1838	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	74.8	75.6	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	74.8	75.6	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	941	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.96	0.96	1.64	0.62	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	941	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	37.3	37.5	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	1.9	3.5	291.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	30.5	34.0	21.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	39.2	41.1	355.1	0.1	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2557			2838	
Approach Delay, s/veh		91.1						39.9			38.2	
Approach LOS		F						D			D	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	77.6	49.1	2.0
Green Ext Time (p_c), s	0.0	3.1	0.0	13.4

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰		↱		↑↑↱		↰	↑↑	
Traffic Volume (veh/h)	210	476	30	611	0	306	0	968	629	120	670	0
Future Volume (veh/h)	210	476	30	611	0	306	0	968	629	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	501	32	643	0	322	0	1019	662	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	387	25	0	0	0	0	1312	762	165	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1714	109		0		0	2112	1172	1767	3618	0
Grp Volume(v), veh/h	221	0	533		0.0		0	874	807	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1823				0	1763	1428	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	55.1	72.7	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	55.1	72.7	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.82	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	928	165	2514	0
V/C Ratio(X)	0.55	0.00	1.30				0.00	0.76	0.87	0.76	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	928	180	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	19.4	22.5	35.9	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	134.7				0.0	0.5	1.1	13.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	32.1				0.0	22.1	23.8	4.0	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	196.6				0.0	19.9	23.7	49.7	8.5	0.0
LnGrp LOS	D	A	F				A	B	C	D	A	A
Approach Vol, veh/h		754						1681			831	
Approach Delay, s/veh		155.1						21.7			14.8	
Approach LOS		F						C			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	5.7	74.7	38.1	13.5
Green Ext Time (p_c), s	0.0	0.0	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	644	306	531	611	30	334	1911	699	0	1917	770
Future Volume (veh/h)	570	644	306	531	611	30	334	1911	699	0	1917	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	440	952	333	425	877	33	363	2077	760	0	2084	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	410	861	345	299	601	23	315	1831	592	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	1767	3711	1488	1767	3550	134	3428	3751	1213	0	5233	1572
Grp Volume(v), veh/h	440	952	333	425	458	452	363	1843	994	0	2084	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1828	1714	1689	1587	0	1689	1572
Q Serve(g_s), s	37.1	37.1	35.4	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	37.1	37.1	35.4	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.76	0.00		1.00
Lane Grp Cap(c), veh/h	410	861	345	299	314	310	315	1648	775	0	1836	
V/C Ratio(X)	1.07	1.11	0.97	1.42	1.46	1.46	1.15	1.12	1.28	0.00	1.13	
Avail Cap(c_a), veh/h	410	861	345	299	314	310	315	1648	775	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.09	0.09	0.09	0.00	0.75	0.00
Uniform Delay (d), s/veh	61.4	61.5	60.8	75.5	75.5	75.5	65.3	1.9	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	65.6	64.1	38.9	190.8	208.0	208.1	72.3	54.0	128.5	0.0	66.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.1	25.2	17.1	28.9	31.8	31.3	9.0	13.1	28.4	0.0	35.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.0	125.5	99.8	266.3	283.6	283.6	137.6	55.9	130.4	0.0	117.4	0.0
LnGrp LOS	F	F	F	F	F	F	F	F	F	A	F	
Approach Vol, veh/h		1725			1335			3200			2084	A
Approach Delay, s/veh		120.9			278.1			88.3			117.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.7	60.0		29.1
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	132.7
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

12: Rosecrans St & Midway Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	528	190	207	717	525	260	1915	130	723	1394	187
Future Volume (veh/h)	408	528	190	207	717	525	260	1915	130	723	1394	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	434	562	202	220	763	559	277	2037	138	769	1483	199
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	634	271	261	734	311	317	1993	134	1211	3044	408
Arrive On Green	0.12	0.18	0.18	0.15	0.21	0.21	0.09	0.41	0.41	0.71	1.00	1.00
Sat Flow, veh/h	3428	3526	1507	1767	3526	1493	3428	4839	326	3428	4506	604
Grp Volume(v), veh/h	434	562	202	220	763	559	277	1418	757	769	1111	571
Grp Sat Flow(s),veh/h/ln	1714	1763	1507	1767	1763	1493	1714	1689	1787	1714	1689	1733
Q Serve(g_s), s	19.6	24.9	22.0	19.4	33.3	24.9	12.8	65.9	65.9	19.1	0.0	0.0
Cycle Q Clear(g_c), s	19.6	24.9	22.0	19.4	33.3	24.9	12.8	65.9	65.9	19.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.35
Lane Grp Cap(c), veh/h	420	634	271	261	734	311	317	1391	736	1211	2282	1171
V/C Ratio(X)	1.03	0.89	0.75	0.84	1.04	1.80	0.87	1.02	1.03	0.64	0.49	0.49
Avail Cap(c_a), veh/h	420	729	312	261	734	311	334	1391	736	1211	2282	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.31	0.31	0.31	0.09	0.09	0.09
Uniform Delay (d), s/veh	70.2	64.0	73.1	66.4	63.4	35.5	71.7	47.1	47.1	18.0	0.0	0.0
Incr Delay (d2), s/veh	52.8	10.6	6.5	20.4	44.0	372.0	7.4	18.6	26.2	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	12.2	9.0	10.3	19.4	41.3	5.9	30.8	34.2	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.0	74.6	79.6	86.8	107.4	407.5	79.1	65.7	73.3	18.1	0.1	0.1
LnGrp LOS	F	E	E	F	F	F	E	F	F	B	A	A
Approach Vol, veh/h		1198			1542			2452			2451	
Approach Delay, s/veh		93.0			213.2			69.5			5.7	
Approach LOS		F			F			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	62.2	70.8	28.5	33.7	19.2	113.8	24.0	38.2
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	21.1	67.9	21.4	26.9	14.8	2.0	21.6	35.3
Green Ext Time (p_c), s	0.2	0.0	0.0	1.1	0.0	5.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	81.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	353	328	20	587	407	120	30	1662	789	160	1310	431
Future Volume (veh/h)	353	328	20	587	407	120	30	1662	789	160	1310	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	368	342	21	611	424	125	31	1731	822	167	1365	449
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	316	402	25	647	446	365	41	2004	607	210	1528	654
Arrive On Green	0.18	0.23	0.23	0.19	0.24	0.24	0.02	0.40	0.40	0.02	0.14	0.14
Sat Flow, veh/h	1767	1726	106	3428	1856	1520	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	368	0	363	611	424	125	31	1731	822	167	1365	449
Grp Sat Flow(s),veh/h/ln	1767	0	1832	1714	1856	1520	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	28.6	0.0	30.3	28.1	36.0	9.2	2.8	50.2	63.3	7.8	60.9	25.7
Cycle Q Clear(g_c), s	28.6	0.0	30.3	28.1	36.0	9.2	2.8	50.2	63.3	7.8	60.9	25.7
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	0	427	647	446	365	41	2004	607	210	1528	654
V/C Ratio(X)	1.16	0.00	0.85	0.94	0.95	0.34	0.75	0.86	1.36	0.80	0.89	0.69
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2004	607	249	1528	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.57	0.57	0.57	1.00	1.00	1.00	0.61	0.61	0.61
Uniform Delay (d), s/veh	65.7	0.0	58.7	64.1	59.9	35.8	77.7	44.4	48.3	77.4	64.9	18.8
Incr Delay (d2), s/veh	103.2	0.0	13.2	14.6	19.2	0.1	9.9	5.2	170.4	7.5	5.4	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.0	0.0	15.7	13.6	19.3	3.5	1.4	21.8	52.8	3.8	30.2	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	168.9	0.0	71.8	78.6	79.1	35.9	87.6	49.6	218.7	84.9	70.3	22.3
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	C
Approach Vol, veh/h		731			1160			2584			1981	
Approach Delay, s/veh		120.7			74.2			103.9			60.7	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	69.0	34.6	42.2	8.1	75.0	33.5	43.3
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	19.8	65.3	30.1	32.3	4.8	62.9	30.6	38.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	1.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	87.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1117	190	450	1004	140	450
Future Volume (veh/h)	1117	190	450	1004	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1227	209	495	1103	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	1005	170	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3086	506	1767	3618	373	1199
Grp Volume(v), veh/h	718	718	495	1103	650	0
Grp Sat Flow(s),veh/h/ln	1763	1736	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	19.3	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	19.3	32.1	0.0
Prop In Lane		0.29	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	583	432	2173	457	0
V/C Ratio(X)	1.21	1.23	1.15	0.51	1.42	0.00
Avail Cap(c_a), veh/h	592	583	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.8	39.2	0.0
Incr Delay (d2), s/veh	111.0	118.6	89.8	0.2	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.8	34.5	22.4	7.2	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	147.7	155.3	131.6	12.0	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1436			1598	650	
Approach Delay, s/veh	151.5			49.1	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	42.5				73.5		37.0
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	27.0	* 37				67.6		32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1				21.3		34.1
Green Ext Time (p_c), s	0.0	0.0				10.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	122.9
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	24

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	337	1896	30	0	1762
Future Vol, veh/h	0	337	1896	30	0	1762
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	347	1955	31	0	1816

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1013	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 235	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	~ 231	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	287	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	231	-
HCM Lane V/C Ratio	-	-	1.504	-
HCM Control Delay (s)	-	-	287	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	20.8	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1467	1383	1926	1581	181
Future Volume (veh/h)	0	1467	1383	1926	1581	181
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1512	1426	1986	1630	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1492	1492	1268	1371	
Arrive On Green	0.00	0.42	0.42	0.42	0.40	0.00
Sat Flow, veh/h	0	3711	3618	1509	3428	1572
Grp Volume(v), veh/h	0	1512	1426	1986	1630	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1509	1714	1572
Q Serve(g_s), s	0.0	25.4	23.5	25.4	24.0	0.0
Cycle Q Clear(g_c), s	0.0	25.4	23.5	25.4	24.0	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1492	1492	1268	1371	
V/C Ratio(X)	0.00	1.01	0.96	1.57	1.19	
Avail Cap(c_a), veh/h	0	1492	1492	1268	1371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	17.3	16.8	3.2	18.0	0.0
Incr Delay (d2), s/veh	0.0	26.6	14.1	258.7	92.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.2	11.0	108.6	25.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	43.9	30.9	261.9	110.5	0.0
LnGrp LOS	A	F	C	F	F	
Approach Vol, veh/h		1512	3412		1630	A
Approach Delay, s/veh		43.9	165.3		110.5	
Approach LOS		D	F		F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		29.2		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		27.4		26.0		27.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	123.7
HCM 6th LOS	F

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

17: Pacific Hwy & Old Town Transit Ctr Drwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	0	0	0	95	1478	0	0	1545	110
Future Volume (veh/h)	80	0	100	0	0	0	95	1478	0	0	1545	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	0	0	0	108	1680	0	0	1756	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	214	30	182	136	407	0	138	2968	0	3	2044	145
Arrive On Green	0.22	0.00	0.22	0.00	0.00	0.00	0.08	0.59	0.00	0.00	0.42	0.42
Sat Flow, veh/h	528	135	830	1268	1856	0	1767	5233	0	1767	4813	342
Grp Volume(v), veh/h	205	0	0	0	0	0	108	1680	0	0	1231	650
Grp Sat Flow(s),veh/h/ln	1492	0	0	1268	1856	0	1767	1689	0	1767	1689	1777
Q Serve(g_s), s	4.3	0.0	0.0	0.0	0.0	0.0	3.2	10.9	0.0	0.0	17.4	17.5
Cycle Q Clear(g_c), s	6.4	0.0	0.0	0.0	0.0	0.0	3.2	10.9	0.0	0.0	17.4	17.5
Prop In Lane	0.44		0.56	1.00		0.00	1.00		0.00	1.00		0.19
Lane Grp Cap(c), veh/h	426	0	0	136	407	0	138	2968	0	3	1434	755
V/C Ratio(X)	0.48	0.00	0.00	0.00	0.00	0.00	0.78	0.57	0.00	0.00	0.86	0.86
Avail Cap(c_a), veh/h	990	0	0	628	1126	0	180	2968	0	224	1456	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	0.0	0.0	0.0	23.9	6.8	0.0	0.0	13.8	13.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.0	0.0	11.2	0.3	0.0	0.0	5.4	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	0.0	0.0	0.0	1.7	2.8	0.0	0.0	6.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	0.0	0.0	0.0	0.0	0.0	35.1	7.1	0.0	0.0	19.1	23.7
LnGrp LOS	B	A	A	A	A	A	D	A	A	A	B	C
Approach Vol, veh/h		205			0			1788			1881	
Approach Delay, s/veh		18.9			0.0			8.8			20.7	
Approach LOS		B						A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	36.4		16.5	8.5	27.9		16.5
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	0.0	12.9		8.4	5.2	19.5		0.0
Green Ext Time (p_c), s	0.0	7.3		0.8	0.0	2.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

18: Pacific Hwy & Kurtz St

Intersection	
Int Delay, s/veh	580.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	974	686	1268	1655	30
Future Vol, veh/h	0	974	686	1268	1655	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1025	722	1335	1742	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	907	1784	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 238	~ 159	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 233	~ 157	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1570.3	$ 588.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 157	-	233	-	-
HCM Lane V/C Ratio	4.599	-	4.4	-	-
HCM Control Delay (s)	$ 1676.4	-	$ 1570.3	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	74.3	-	102.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	283

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	640	0	3068	2799	315
Future Vol, veh/h	0	640	0	3068	2799	315
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	660	0	3163	2886	325

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1627	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 90	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 88	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 3016.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	88	-	-
HCM Lane V/C Ratio	-	7.498	-	-
HCM Control Delay (s)		$ 3016.3	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	74.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	20	120	150	60	110	280	2697	20	47	3212	180
Future Volume (veh/h)	234	20	120	150	60	110	280	2697	20	47	3212	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	260	22	133	167	67	122	311	2997	22	52	3569	200
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1554	666	67	1253	69
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.44	0.44	0.04	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1511	1767	3387	187
Grp Volume(v), veh/h	260	22	133	167	67	122	311	2997	22	52	1836	1933
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1511	1767	1763	1812
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	61.7	1.2	4.1	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	61.7	1.2	4.1	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1554	666	67	652	670
V/C Ratio(X)	1.94	0.05	0.34	0.87	0.13	0.34	1.52	1.93	0.03	0.78	2.81	2.88
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1554	666	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	39.1	22.2	66.8	44.1	44.1
Incr Delay (d2), s/veh	450.4	0.0	0.2	14.2	0.0	0.2	257.7	420.0	0.0	34.8	821.0	851.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	0.6	3.9	6.6	1.8	3.4	21.9	116.9	0.4	2.5	171.1	181.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	515.1	40.3	43.6	75.7	37.8	40.5	319.6	459.1	22.2	101.6	865.1	895.5
LnGrp LOS	F	D	D	E	D	D	F	F	C	F	F	F
Approach Vol, veh/h		415			356			3330			3821	
Approach Delay, s/veh		338.9			56.5			443.2			870.1	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	70.4	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	6.1	63.7	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	626.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	12460

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2961	2842	2997	3292	190
Future Vol, veh/h	0	2961	2842	2997	3292	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	3290	3158	3330	3658	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1849	3879	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 63	~ 48	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 62	~ 48	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 23551.1	$ 14266	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 48	-	62	-	-
HCM Lane V/C Ratio	65.787	-	53.065	-	-
HCM Control Delay (s)	$ 29310.1		$ 23551.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	391.7	-	406.5	-	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	318	230	350	10	517	60	270	10	130	50
Future Volume (veh/h)	10	150	318	230	350	10	517	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	335	242	368	11	544	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	177	375	168	629	19	498	46	210	79	615	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	503	1066	890	1789	53	828	96	432	33	1267	466
Grp Volume(v), veh/h	11	0	493	242	0	379	891	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1568	890	0	1843	1355	0	0	1766	0	0
Q Serve(g_s), s	0.6	0.0	17.8	3.3	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	17.8	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.03	0.61		0.32	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	552	168	0	648	754	0	0	920	0	0
V/C Ratio(X)	0.04	0.00	0.89	1.44	0.00	0.58	1.18	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	552	168	0	648	754	0	0	920	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	18.4	29.5	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	17.4	227.1	0.0	1.4	95.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	8.3	12.9	0.0	4.0	29.6	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	35.8	256.6	0.0	17.3	111.9	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	D	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		504			621			891			201	
Approach Delay, s/veh		35.5			110.5			111.9			9.0	
Approach LOS		D			F			F			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.0	34.0	26.0	34.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.1	29.1	21.1	29.1
Max Q Clear Time (g_c+I1), s	19.8	6.0	23.1	31.1
Green Ext Time (p_c), s	0.6	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	84.8
HCM 6th LOS	F

Year 2050B + P4 PM
23: Old Town Ave & Moore St

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	1291	557	50	0	548	280
Future Volume (veh/h)	5	10	30	80	190	310	1291	557	50	0	548	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	1403	605	54	0	596	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1065	95	0	369	188
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1673	149	0	1148	585
Grp Volume(v), veh/h	49	0	0	631	0	0	1403	0	659	0	0	900
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1823	0	0	1733
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	16.5	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	16.5	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.08	0.00		0.34
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1160	0	0	557
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	3.05	0.00	0.57	0.00	0.00	1.62
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1160	0	0	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.3	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	929.9	0.0	0.4	0.0	0.0	285.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	127.1	0.0	5.5	0.0	0.0	54.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	959.5	0.0	8.7	0.0	0.0	312.7
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			2062			900	
Approach Delay, s/veh		23.8			251.2			655.6			312.7	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	55.8	24.2	25.2	30.6	24.2
Change Period (Y+Rc), s	4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	50.9	19.3	20.8	25.7	19.3
Max Q Clear Time (g_c+I1), s	18.5	3.9	22.8	27.7	21.3
Green Ext Time (p_c), s	3.2	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	492.3
HCM 6th LOS	F

Year 2050B + P4 PM
24: Hancock St/Old Town Ave & I-5 SB Off-Ramp

Old Town Complex
08/13/2020

Intersection	
Intersection Delay, s/veh	551.4
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	1213	0	1250	298	0
Future Vol, veh/h	530	1213	0	1250	298	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	1348	0	1389	331	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	521.6	718.6	24.6
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1250	530	1213	298
LT Vol	0	530	0	0
Through Vol	1250	0	0	298
RT Vol	0	0	1213	0
Lane Flow Rate	1389	589	1348	331
Geometry Grp	2	7	7	2
Degree of Util (X)	2.556	1.263	2.443	0.648
Departure Headway (Hd)	5.882	10.233	8.974	8.01
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	639	359	418	454
Service Time	3.882	7.933	6.674	6.01
HCM Lane V/C Ratio	2.174	1.641	3.225	0.729
HCM Control Delay	718.6	168.6	675.9	24.6
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	123.8	19.9	77.1	4.5

Intersection	
Intersection Delay, s/veh	506.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	1250	98	110	20	1213	5	247	10	5	5
Future Vol, veh/h	10	400	1250	98	110	20	1213	5	247	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	1316	103	116	21	1277	5	260	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	490.2	26.3	835.7	16.4
HCM LOS	F	D	F	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	2%	0%	43%	50%
Vol Thru, %	0%	98%	0%	48%	25%
Vol Right, %	17%	0%	100%	9%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1465	410	1250	228	20
LT Vol	1213	10	0	98	10
Through Vol	5	400	0	110	5
RT Vol	247	0	1250	20	5
Lane Flow Rate	1542	432	1316	240	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	2.811	0.852	2.337	0.482	0.048
Departure Headway (Hd)	7	11.396	10.639	12.338	12.793
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	540	324	355	295	282
Service Time	5	9.096	8.339	10.338	10.793
HCM Lane V/C Ratio	2.856	1.333	3.707	0.814	0.074
HCM Control Delay	835.7	54.8	633	26.3	16.4
HCM Lane LOS	F	F	F	D	C
HCM 95th-tile Q	120.9	7.5	61.4	2.5	0.2

Intersection	
Intersection Delay, s/veh	729.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	1405	145	1208
Future Vol, veh/h	60	70	200	1405	145	1208
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	1713	177	1473
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	14.7	908.6	584.9
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	12%	100%	0%	0%
Vol Thru, %	88%	0%	0%	11%
Vol Right, %	0%	0%	100%	89%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1605	60	70	1353
LT Vol	200	60	0	0
Through Vol	1405	0	0	145
RT Vol	0	0	70	1208
Lane Flow Rate	1957	73	85	1650
Geometry Grp	2	7	7	2
Degree of Util (X)	2.975	0.166	0.165	2.251
Departure Headway (Hd)	6.754	10.77	9.475	6.874
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	335	382	545
Service Time	4.754	8.47	7.175	4.874
HCM Lane V/C Ratio	3.445	0.218	0.223	3.028
HCM Control Delay	908.6	15.6	14	584.9
HCM Lane LOS	F	C	B	F
HCM 95th-tile Q	136	0.6	0.6	87

Intersection	
Intersection Delay, s/veh	423
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	79	1185	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	79	1185	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	94	1411	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	683	56.4	24.8
HCM LOS	-	F	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	26%
Vol Thru, %	100%	0%	100%	6%	74%
Vol Right, %	0%	100%	0%	93%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	1274	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	79	160
RT Vol	0	250	0	1185	0
Lane Flow Rate	500	298	0	1517	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.975	0.522	0	2.476	0.509
Departure Headway (Hd)	10.658	9.917	11.445	5.876	10.942
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	345	366	0	622	333
Service Time	8.358	7.617	9.445	3.953	8.942
HCM Lane V/C Ratio	1.449	0.814	0	2.439	0.769
HCM Control Delay	76.3	23	14.4	683	24.8
HCM Lane LOS	F	C	N	F	C
HCM 95th-tile Q	10.6	2.9	0	116.4	2.7

Intersection	
Intersection Delay, s/veh	142.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	187	240	150	0	0	0	150	120	250	330	140	148
Future Vol, veh/h	187	240	150	0	0	0	150	120	250	330	140	148
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	205	264	165	0	0	0	165	132	275	363	154	163
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	143.3	94.2	183.1
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	32%	53%
Vol Thru, %	23%	42%	23%
Vol Right, %	48%	26%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	577	618
LT Vol	150	187	330
Through Vol	120	240	140
RT Vol	250	150	148
Lane Flow Rate	571	634	679
Geometry Grp	1	1	1
Degree of Util (X)	1.082	1.225	1.323
Departure Headway (Hd)	7.922	7.577	7.797
Convergence, Y/N	Yes	Yes	Yes
Cap	463	482	469
Service Time	5.922	5.577	5.797
HCM Lane V/C Ratio	1.233	1.315	1.448
HCM Control Delay	94.2	143.3	183.1
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.1	22.9	27.1

29: Washington St & San Diego Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2164	0	0	798	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2164	0	0	798	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2278	0	0	840	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2278	0	0	840	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	13.6	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	13.6	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.93	0.00	0.00	0.48	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	14.5	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.9	0.0	0.0	1.0	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.3	0.0	0.0	5.3	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.9	0.0	0.0	15.4	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2762			1556	
Approach Delay, s/veh					32.0			7.1			28.0	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.4			17.0	47.4		21.6
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			14.0	40.3		11.9
Green Ext Time (p_c), s		38.6			0.0	0.0		2.0

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

30: Washington St & Hancock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1284	170	300	708	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1284	170	300	708	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1324	175	309	730	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1324	175	309	730	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	15.0	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	15.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.34	0.42	0.90	0.52	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.55	0.55	0.83	0.83	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	14.4	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	157.0	1.7	21.8	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	31.1	2.8	4.2	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	185.0	22.9	60.1	15.6	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1499			1039	
Approach Delay, s/veh		43.7						166.0			28.8	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	35.0		38.0		48.0
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	9.7	32.1		35.1		17.0
Green Ext Time (p_c), s	0.0	0.0		0.0		6.1

Intersection Summary	
HCM 6th Ctrl Delay	79.3
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	1134	0	0	620	368
Future Volume (veh/h)	120	0	150	80	70	200	230	1134	0	0	620	368
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1194	0	0	653	387
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	38	0	47	368	387	309	194	1547	0	0	1072	461
Arrive On Green	0.05	0.00	0.05	0.21	0.21	0.21	0.11	0.55	0.00	0.00	0.38	0.38
Sat Flow, veh/h	726	0	911	1767	1856	1484	1767	2897	0	0	2897	1212
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1194	0	0	653	387
Grp Sat Flow(s),veh/h/ln	1637	0	0	1767	1856	1484	1767	1411	0	0	1411	1212
Q Serve(g_s), s	4.0	0.0	0.0	3.1	2.5	10.1	8.5	25.6	0.0	0.0	14.4	22.5
Cycle Q Clear(g_c), s	4.0	0.0	0.0	3.1	2.5	10.1	8.5	25.6	0.0	0.0	14.4	22.5
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	85	0	0	368	387	309	194	1547	0	0	1072	461
V/C Ratio(X)	3.35	0.00	0.00	0.23	0.19	0.68	1.24	0.77	0.00	0.00	0.61	0.84
Avail Cap(c_a), veh/h	85	0	0	595	624	499	194	1666	0	0	1176	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	25.4	25.2	28.2	34.4	13.7	0.0	0.0	19.3	21.8
Incr Delay (d2), s/veh	1086.9	0.0	0.0	0.1	0.1	1.0	145.7	1.8	0.0	0.0	0.9	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.2	0.0	0.0	1.3	1.1	3.6	11.4	7.4	0.0	0.0	4.5	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1123.5	0.0	0.0	25.5	25.3	29.2	180.1	15.5	0.0	0.0	20.2	33.4
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	C
Approach Vol, veh/h		284			369			1436			1040	
Approach Delay, s/veh		1123.5			27.6			43.2			25.1	
Approach LOS		F			C			D			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		46.8		8.0	13.0	33.8		22.5
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		27.6		6.0	10.5	24.5		12.1
Green Ext Time (p_c), s		6.0		0.0	0.0	4.1		1.1

Intersection Summary	
HCM 6th Ctrl Delay	133.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	874	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	874	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	1029	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1244	0	876				0	631	116	325	621	0
Arrive On Green	0.35	0.00	0.35				0.00	0.21	0.21	0.18	0.18	0.00
Sat Flow, veh/h	3534	0	1531				0	3032	538	1767	3544	0
Grp Volume(v), veh/h	1029	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1531				0	1763	1715	1767	1689	0
Q Serve(g_s), s	15.5	0.0	1.8				0.0	9.5	9.7	10.7	2.8	0.0
Cycle Q Clear(g_c), s	15.5	0.0	1.8				0.0	9.5	9.7	10.7	2.8	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1244	0	876				0	378	368	325	621	0
V/C Ratio(X)	0.83	0.00	0.12				0.00	0.80	0.81	1.09	0.30	0.00
Avail Cap(c_a), veh/h	1872	0	1148				0	424	413	325	621	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.2	0.0	5.9				0.0	21.7	21.7	23.7	20.5	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0				0.0	8.6	9.5	75.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.8				0.0	4.5	4.5	10.9	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	5.9				0.0	30.3	31.2	99.5	20.8	0.0
LnGrp LOS	B	A	A				A	C	C	F	C	A
Approach Vol, veh/h		1133						604			542	
Approach Delay, s/veh		17.2						30.7			72.2	
Approach LOS		B						C			E	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	16.5	26.7	15.0
Change Period (Y+Rc), s	4.0	6.2	4.3
Max Green Setting (Gmax), s	14.0	30.8	10.7
Max Q Clear Time (g_c+I1), s	11.7	17.5	12.7
Green Ext Time (p_c), s	0.7	2.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	148	270	754	70	267	1421	80
Future Volume (veh/h)	100	290	140	430	420	148	270	754	70	267	1421	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	151	276	769	71	272	1450	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	102	434	430	278	446	157	107	1097	101	175	1433	81
Arrive On Green	0.06	0.28	0.28	0.19	0.41	0.41	0.06	0.23	0.23	0.12	0.29	0.29
Sat Flow, veh/h	1767	1537	1525	1464	1078	379	1767	4695	430	1464	4896	277
Grp Volume(v), veh/h	102	296	143	439	0	580	276	552	288	272	1000	532
Grp Sat Flow(s),veh/h/ln	1767	1537	1525	1464	0	1457	1767	1689	1748	1464	1689	1796
Q Serve(g_s), s	6.3	18.6	8.1	20.6	0.0	42.1	6.6	16.3	16.5	13.0	31.8	31.8
Cycle Q Clear(g_c), s	6.3	18.6	8.1	20.6	0.0	42.1	6.6	16.3	16.5	13.0	31.8	31.8
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.25	1.00		0.15
Lane Grp Cap(c), veh/h	102	434	430	278	0	603	107	789	408	175	988	525
V/C Ratio(X)	1.00	0.68	0.33	1.58	0.00	0.96	2.57	0.70	0.71	1.55	1.01	1.01
Avail Cap(c_a), veh/h	102	453	449	278	0	621	107	789	408	175	988	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	34.7	30.9	44.0	0.0	31.0	51.0	38.1	38.2	47.8	38.4	38.4
Incr Delay (d2), s/veh	87.4	3.2	0.2	278.5	0.0	26.5	733.7	3.3	6.6	275.0	31.6	42.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	7.3	3.0	28.8	0.0	18.7	24.8	7.0	7.7	18.1	17.2	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.6	37.8	31.1	322.5	0.0	57.6	784.7	41.4	44.8	322.9	70.1	80.8
LnGrp LOS	F	D	C	F	A	E	F	D	D	F	F	F
Approach Vol, veh/h		541			1019			1116			1804	
Approach Delay, s/veh		55.0			171.7			226.1			111.3	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.7	25.0	35.6	11.0	37.1	10.7	49.9
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	18.5	22.6	20.6	8.6	33.8	8.3	44.1
Green Ext Time (p_c), s	0.0	4.2	0.0	1.1	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	146.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	569	1810	180	130	1040	139	170	626	170	229	1204	967
Future Volume (veh/h)	569	1810	180	130	1040	139	170	626	170	229	1204	967
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	654	2080	207	149	1195	160	195	720	195	263	1384	1111
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	798	106	155	1640	438	286	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.41	0.41	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3112	415	1767	3955	1056	1767	5066	1537
Grp Volume(v), veh/h	654	1114	1173	149	675	680	195	613	302	263	1384	1111
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1765	1767	1689	1634	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	18.2	18.6	20.5	26.9	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	18.2	18.6	20.5	26.9	68.4
Prop In Lane	1.00		0.18	1.00		0.24	1.00		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	453	155	1400	678	286	2475	1140
V/C Ratio(X)	1.50	1.55	1.61	0.94	1.49	1.50	1.26	0.44	0.45	0.92	0.56	0.97
Avail Cap(c_a), veh/h	437	718	728	159	452	453	155	1400	678	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	29.3	29.4	57.8	25.2	17.6
Incr Delay (d2), s/veh	235.6	255.5	280.8	52.3	233.0	238.0	156.9	1.0	2.1	27.1	0.9	21.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.9	75.3	81.6	7.6	45.1	45.8	12.3	7.6	7.8	11.3	11.0	36.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	288.3	297.0	322.3	115.6	285.1	290.0	220.8	30.3	31.5	84.9	26.1	38.8
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	D
Approach Vol, veh/h		2941			1504			1110			2758	
Approach Delay, s/veh		305.2			270.5			64.1			36.8	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	64.3	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	22.5	20.6	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	177.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2050B + P4 PM
35: Harbor Dr & Laurel St

Old Town Complex
08/13/2020

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1931	3050	2080	238	147	60
Future Volume (veh/h)	1931	3050	2080	238	147	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2076	3280	2237	0	158	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4082	2140		189	168
Arrive On Green	0.35	0.81	0.42	0.00	0.11	0.11
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2076	3280	2237	0	158	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	42.8	50.7	0.0	10.5	4.6
Cycle Q Clear(g_c), s	41.6	42.8	50.7	0.0	10.5	4.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4082	2140		189	168
V/C Ratio(X)	1.75	0.80	1.05		0.84	0.39
Avail Cap(c_a), veh/h	1188	4082	2140		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	6.4	34.7	0.0	52.6	49.9
Incr Delay (d2), s/veh	339.5	1.8	32.6	0.0	3.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	78.2	11.8	26.7	0.0	4.9	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	378.7	8.2	67.3	0.0	56.3	50.5
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5356	2237	A	223	
Approach Delay, s/veh		151.8	67.3		54.6	
Approach LOS		F	E		D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	102.0	18.0	46.0	56.0
Change Period (Y+Rc), s	5.3	5.2	4.4	* 5.3
Max Green Setting (Gmax), s	79.5	30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s	44.8	12.5	43.6	52.7
Green Ext Time (p_c), s	34.6	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	124.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050B + P4 PM
36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Old Town Complex
08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	228	290	388	127	375	220	1210	373	421	1260	230
Future Volume (veh/h)	190	228	290	388	127	375	220	1210	373	421	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	238	302	404	132	391	229	1260	389	439	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	255	442	360	175	487	399	263	950	285	244	1478	766
Arrive On Green	0.07	0.24	0.24	0.10	0.26	0.26	0.08	0.36	0.36	0.14	0.42	0.42
Sat Flow, veh/h	3428	1856	1511	1767	1856	1519	3428	2653	795	1767	3526	1549
Grp Volume(v), veh/h	198	238	302	404	132	391	229	824	825	439	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1511	1767	1856	1519	1714	1763	1685	1767	1763	1549
Q Serve(g_s), s	6.7	13.2	22.3	11.6	6.6	30.0	7.8	42.0	42.0	16.2	40.4	10.9
Cycle Q Clear(g_c), s	6.7	13.2	22.3	11.6	6.6	30.0	7.8	42.0	42.0	16.2	40.4	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	255	442	360	175	487	399	263	631	603	244	1478	766
V/C Ratio(X)	0.78	0.54	0.84	2.31	0.27	0.98	0.87	1.31	1.37	1.80	0.89	0.31
Avail Cap(c_a), veh/h	333	490	399	175	487	399	263	631	603	244	1481	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	39.1	42.6	52.9	34.4	43.0	53.6	37.7	37.7	50.6	31.5	17.8
Incr Delay (d2), s/veh	5.8	1.0	13.6	608.3	0.1	39.7	24.7	149.2	175.7	375.6	7.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	6.1	9.4	34.5	2.9	15.2	4.2	43.4	46.0	32.5	17.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	40.1	56.2	661.1	34.5	82.7	78.3	186.9	213.3	426.2	38.6	18.1
LnGrp LOS	E	D	E	F	C	F	E	F	F	F	D	B
Approach Vol, veh/h		738			927			1878			1991	
Approach Delay, s/veh		51.8			327.9			185.2			121.6	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	33.4	13.4	54.5	13.1	36.3
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	18.2	44.0	13.6	24.3	9.8	42.4	8.7	32.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	5.7	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	168.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1417	320	290	608	0	0	0	0	190	0	1253
Future Volume (veh/h)	0	1417	320	290	608	0	0	0	0	190	0	1253
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1492	337	305	640	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1655	738	869	2725	0				231	0	
Arrive On Green	0.00	0.47	0.47	0.51	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1492	337	305	640	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	38.9	14.5	5.3	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	38.9	14.5	5.3	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1655	738	869	2725	0				231	0	
V/C Ratio(X)	0.00	0.90	0.46	0.35	0.23	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	869	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.24	0.24	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.4	17.9	19.7	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.2	0.1	0.0	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.9	4.9	1.9	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.3	18.1	19.8	0.0	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1829			945						200	A
Approach Delay, s/veh		23.9			6.4						50.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.3	52.0		17.7		82.3
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	17.3	40.9		13.1		2.0
Green Ext Time (p_c), s	0.6	6.0		0.1		3.0

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1020	587	0	0	578	380	320	10	640	0	0	0
Future Volume (veh/h)	1020	587	0	0	578	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1030	593	0	0	584	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1177	2374	0	0	560	368	488	15	447			
Arrive On Green	0.57	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2093	1315	1717	53	1572			
Grp Volume(v), veh/h	1030	593	0	0	515	453	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1552	1770	0	1572			
Q Serve(g_s), s	25.7	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.7	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.85	0.97		1.00			
Lane Grp Cap(c), veh/h	1177	2374	0	0	494	435	503	0	447			
V/C Ratio(X)	0.88	0.25	0.00	0.00	1.04	1.04	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1177	2374	0	0	494	435	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.47	0.47	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.5	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	3.8	0.1	0.0	0.0	52.2	54.8	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.0	0.0	18.7	16.8	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.1	0.0	0.0	88.2	90.8	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1623			968			979				
Approach Delay, s/veh		14.8			89.4			176.0				
Approach LOS		B			F			F				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	72.8	33.0	39.8	33.0
Change Period (Y+Rc), s	5.5	4.6	5.5	* 5
Max Green Setting (Gmax), s	61.5	28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s	2.0	30.4	27.7	30.0
Green Ext Time (p_c), s	2.8	0.0	0.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1126	10	387	874	0	1288
Future Volume (veh/h)	1126	10	387	874	0	1288
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1195	0	407	0	0	1356
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1269	578	1523		0	1523
Arrive On Green	0.36	0.00	0.43	0.00	0.00	0.43
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1195	0	407	0	0	1356
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	22.3	0.0	5.0	0.0	0.0	24.1
Cycle Q Clear(g_c), s	22.3	0.0	5.0	0.0	0.0	24.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1269	578	1523		0	1523
V/C Ratio(X)	0.94	0.00	0.27		0.00	0.89
Avail Cap(c_a), veh/h	1273	580	1523		0	1529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	12.4	0.0	0.0	17.8
Incr Delay (d2), s/veh	13.7	0.0	0.4	0.0	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	1.9	0.0	0.0	10.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	0.0	12.8	0.0	0.0	26.0
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1195		407	A		1356
Approach Delay, s/veh	34.7		12.8			26.0
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	34.9	34.9	33.1
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	7.0	26.1	24.3
Green Ext Time (p_c), s	3.6	2.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX S

YEAR 2050 WITH ALTERNATIVE 4 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7292	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1337
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, In	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7185	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1317
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8611	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1579
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10146	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1860
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8636	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1912
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.4
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9047	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2003
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9442	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2090
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9837	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2178
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1979
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9970	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2207
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10437	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2311
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10296	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2280
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9850	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2181
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10930	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2420
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11467	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2539
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.20
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11316	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2505
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8260	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2286
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9250	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2560
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.16
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9667	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2675
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.21
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9516	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2634
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11062	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2449
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.11
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12195	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2700
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.22
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12832	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2841
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.28
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12692	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2810
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.27
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9104	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2016
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.3
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10069	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2229
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.01
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10577	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2342
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.06
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10459	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2316
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3897	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1065
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3124	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	854
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4978	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1361
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4781	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1307
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.6
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4502	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1230
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5964	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1630
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6030	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2198
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.8
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4885	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1780
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7222	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1579
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9694	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2120
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	47.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9880	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2160
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.11
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7815	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1709
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7027	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1921
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9316	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2546
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9435	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2063
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7623	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1667
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7467	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2039
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9926	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2710
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.22
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10065	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2199
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 4: With Transit Center (High)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8103	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1770
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX T

YEAR 2050 WITH ALTERNATIVE 5 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	190	210	90	140	140	811
Future Volume (vph)	190	210	90	140	140	811
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	228	98	152	152	882

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	207	228	250	152	882
Volume Left (vph)	207	0	0	152	0
Volume Right (vph)	0	0	152	0	882
Hadj (s)	0.55	0.05	-0.31	0.25	-0.55
Departure Headway (s)	5.7	5.2	4.7	5.7	3.2
Degree Utilization, x	0.33	0.33	0.32	0.24	0.78
Capacity (veh/h)	610	667	741	577	1121
Control Delay (s)	10.4	9.6	9.9	10.5	16.7
Approach Delay (s)	10.0		9.9	15.8	
Approach LOS	A		A	C	

Intersection Summary			
Delay	13.4		
Level of Service	B		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	414	120	841	60	280	190
Future Volume (veh/h)	414	120	841	60	280	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	440	128	895	0	298	202
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	486	1248	1171		452	640
Arrive On Green	0.28	0.67	0.33	0.00	0.13	0.13
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	440	128	895	0	298	202
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	15.4	1.6	14.5	0.0	5.3	5.6
Cycle Q Clear(g_c), s	15.4	1.6	14.5	0.0	5.3	5.6
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	486	1248	1171		452	640
V/C Ratio(X)	0.91	0.10	0.76		0.66	0.32
Avail Cap(c_a), veh/h	547	1594	1707		1205	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	3.7	19.1	0.0	26.4	12.9
Incr Delay (d2), s/veh	16.4	0.0	0.6	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.4	5.5	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.8	3.7	19.8	0.0	27.0	13.0
LnGrp LOS	D	A	B		C	B
Approach Vol, veh/h		568	895	A	500	
Approach Delay, s/veh		30.9	19.8		21.4	
Approach LOS		C	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.1		14.9	21.8	27.3
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.6		7.6	17.4	16.5
Green Ext Time (p_c), s		0.5		0.9	0.2	3.9

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	5	293	0	0	10	438	424	5	10	831	220
Future Volume (veh/h)	140	5	293	0	0	10	438	424	5	10	831	220
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	0	308				461	446	5	11	875	232
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	915	0	594				437	1732	19	20	1002	265
Arrive On Green	0.26	0.00	0.26				0.13	0.49	0.49	0.01	0.37	0.37
Sat Flow, veh/h	3534	0	1520				3428	3569	40	1767	2716	719
Grp Volume(v), veh/h	151	0	308				461	220	231	11	567	540
Grp Sat Flow(s),veh/h/ln	1767	0	1520				1714	1763	1846	1767	1763	1673
Q Serve(g_s), s	2.0	0.0	9.3				7.6	4.4	4.4	0.4	17.9	17.9
Cycle Q Clear(g_c), s	2.0	0.0	9.3				7.6	4.4	4.4	0.4	17.9	17.9
Prop In Lane	1.00		1.00				1.00		0.02	1.00		0.43
Lane Grp Cap(c), veh/h	915	0	594				437	855	896	20	650	617
V/C Ratio(X)	0.16	0.00	0.52				1.06	0.26	0.26	0.56	0.87	0.87
Avail Cap(c_a), veh/h	1777	0	964				437	855	896	151	674	639
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	14.1				26.0	9.0	9.0	29.4	17.5	17.5
Incr Delay (d2), s/veh	0.1	0.0	1.2				58.6	0.2	0.2	8.8	12.1	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	8.4				6.4	1.5	1.5	0.2	8.5	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	15.2				84.6	9.2	9.2	38.2	29.6	30.4
LnGrp LOS	B	A	B				F	A	A	D	C	C
Approach Vol, veh/h		459						912			1118	
Approach Delay, s/veh		15.9						47.3			30.1	
Approach LOS		B						D			C	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.1	33.9		20.8	12.0	26.9
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3		30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.4	6.4		11.3	9.6	19.9
Green Ext Time (p_c), s	0.0	2.8		2.9	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	94	10	210	50	652	56	130	814	40
Future Volume (veh/h)	10	10	10	94	10	210	50	652	56	130	814	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	98	10	219	52	679	58	135	848	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	210	203	161	195	47	313	71	1537	130	173	1303	65
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.32	0.32	0.10	0.38	0.38
Sat Flow, veh/h	385	653	519	345	151	1006	1767	4736	401	1767	3409	169
Grp Volume(v), veh/h	30	0	0	327	0	0	52	482	255	135	438	452
Grp Sat Flow(s),veh/h/ln	1557	0	0	1502	0	0	1767	1689	1760	1767	1763	1815
Q Serve(g_s), s	0.0	0.0	0.0	6.5	0.0	0.0	1.6	6.0	6.1	4.0	10.9	10.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	10.0	0.0	0.0	1.6	6.0	6.1	4.0	10.9	10.9
Prop In Lane	0.33		0.33	0.30		0.67	1.00		0.23	1.00		0.09
Lane Grp Cap(c), veh/h	574	0	0	555	0	0	71	1096	571	173	674	694
V/C Ratio(X)	0.05	0.00	0.00	0.59	0.00	0.00	0.73	0.44	0.45	0.78	0.65	0.65
Avail Cap(c_a), veh/h	941	0	0	929	0	0	186	1591	829	352	996	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	0.0	16.0	0.0	0.0	25.3	14.2	14.2	23.5	13.5	13.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	5.3	0.4	0.8	2.9	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	3.1	0.0	0.0	0.7	2.1	2.2	1.7	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	0.0	16.4	0.0	0.0	30.5	14.6	15.0	26.3	15.0	14.9
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			327			789			1025	
Approach Delay, s/veh		12.9			16.4			15.7			16.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	22.2		21.5	6.5	25.3		21.5
Change Period (Y+Rc), s	4.4	4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	10.6	25.1		30.1	5.6	30.1		30.1
Max Q Clear Time (g_c+I1), s	6.0	8.1		2.6	3.6	12.9		12.0
Green Ext Time (p_c), s	0.1	5.9		0.1	0.0	6.9		1.4

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	618	230	180	748	0	180	0	150	0	0	0
Future Volume (veh/h)	0	618	230	180	748	0	180	0	150	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.89		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	637	237	186	771	0	186	0	155	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1042	377	215	1624	0	410	0	309	0	374	0
Arrive On Green	0.00	0.37	0.37	0.12	0.59	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	2966	1026	1767	2849	0	1256	0	1531	0	1856	0
Grp Volume(v), veh/h	0	597	277	186	771	0	186	0	155	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1201	1767	1388	0	1256	0	1531	0	1856	0
Q Serve(g_s), s	0.0	8.4	8.7	4.7	7.3	0.0	6.4	0.0	4.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.4	8.7	4.7	7.3	0.0	6.4	0.0	4.1	0.0	0.0	0.0
Prop In Lane	0.00		0.85	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	977	441	215	1624	0	410	0	309	0	374	0
V/C Ratio(X)	0.00	0.61	0.63	0.86	0.47	0.00	0.45	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1452	656	215	2120	0	979	0	1003	0	1251	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.9	12.0	19.8	5.5	0.0	17.2	0.0	16.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.4	27.5	0.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	2.0	3.4	1.3	0.0	1.6	0.0	1.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.4	13.4	47.3	5.6	0.0	17.5	0.0	16.8	0.0	0.0	0.0
LnGrp LOS	A	B	B	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		874			957			341			0	
Approach Delay, s/veh		12.7			13.7			17.2			0.0	
Approach LOS		B			B			B				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	21.8		14.2		31.8		14.2
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	6.7	10.7		0.0		9.3		8.4
Green Ext Time (p_c), s	0.0	5.0		0.0		3.9		1.0

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	310	230	478	270	180	280	660	488	80	483	200
Future Volume (veh/h)	214	310	230	478	270	180	280	660	488	80	483	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.92	1.00		0.96	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	230	333	247	514	290	194	301	710	525	86	519	215
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
Arrive On Green	0.08	0.30	0.30	0.11	0.33	0.33	0.07	0.32	0.32	0.07	0.32	0.32
Sat Flow, veh/h	1767	2776	1270	2699	1461	1144	1767	3526	1183	1391	3526	1412
Grp Volume(v), veh/h	230	333	247	514	290	194	301	710	525	86	519	215
Grp Sat Flow(s),veh/h/ln	1767	1388	1270	1350	1461	1144	1767	1763	1183	1391	1763	1412
Q Serve(g_s), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	20.5	37.9	7.3	14.1	14.7
Cycle Q Clear(g_c), s	9.4	11.4	18.0	13.6	19.7	16.2	8.9	20.5	37.9	7.3	14.1	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	831	497	308	489	383	132	1119	517	102	1115	447
V/C Ratio(X)	1.65	0.40	0.50	1.67	0.59	0.51	2.28	0.63	1.02	0.84	0.47	0.48
Avail Cap(c_a), veh/h	139	839	501	308	493	386	132	1119	517	105	1122	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	33.3	29.1	52.9	33.0	31.8	55.2	34.8	34.2	54.6	32.7	32.9
Incr Delay (d2), s/veh	323.5	0.4	0.9	316.1	1.4	0.6	601.4	1.2	43.7	40.3	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	3.9	5.6	18.1	7.1	4.5	26.0	9.0	20.8	3.7	6.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	378.5	33.7	30.0	368.9	34.4	32.4	656.7	36.0	77.9	95.0	32.8	33.2
LnGrp LOS	F	C	C	F	C	C	F	D	F	F	C	C
Approach Vol, veh/h		810			998			1536			820	
Approach Delay, s/veh		130.5			206.3			172.0			39.5	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	41.6	14.3	44.5	14.8	45.8	14.2	44.6
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	20.0	10.9	16.7	11.4	21.7	9.3	39.9
Green Ext Time (p_c), s	0.0	3.6	0.0	2.8	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	146.0
HCM 6th LOS	F

Year 2050B + P5 AM — Old Town Complex
7: Rosecrans St & Jefferson St — 08/13/2020

Intersection						
Int Delay, s/veh	2.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	30	70	704	610	140
Future Vol, veh/h	50	30	70	704	610	140
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	31	71	718	622	143

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1299	798	859	0	-	0
Stage 1	788	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	164	383	775	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	345	706	-	-	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	364	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.4	1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	161	-	-
HCM Lane V/C Ratio	0.101	-	0.507	-	-
HCM Control Delay (s)	10.7	-	48.4	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.5	-	-

Year 2050B + P5 AM — Old Town Complex
8: Camino Del Rio W & Hancock St — 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	650	397	360	2177	0	0	2681	630
Future Volume (veh/h)	0	0	0	90	650	397	360	2177	0	0	2681	630
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	670	409	371	2244	0	0	2764	649
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				88	644	423	341	3632	0	0	2463	736
Arrive On Green				0.34	0.34	0.34	0.39	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				260	1902	1250	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				659	0	513	371	2244	0	0	2764	649
Grp Sat Flow(s),veh/h/ln				1843	0	1569	1767	1689	0	0	1689	1513
Q Serve(g_s), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Cycle Q Clear(g_c), s				44.0	0.0	41.8	25.1	0.0	0.0	0.0	63.2	50.2
Prop In Lane				0.14		0.80	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	531	341	3632	0	0	2463	736
V/C Ratio(X)				1.06	0.00	0.97	1.09	0.62	0.00	0.00	1.12	0.88
Avail Cap(c_a), veh/h				624	0	531	341	3632	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	42.3	39.9	0.0	0.0	0.0	33.4	30.0
Incr Delay (d2), s/veh				51.7	0.0	30.5	44.5	0.1	0.0	0.0	61.1	14.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				28.7	0.0	20.5	13.1	0.0	0.0	0.0	38.6	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				94.7	0.0	72.8	84.4	0.1	0.0	0.0	94.5	44.5
LnGrp LOS				F	A	E	F	A	A	A	F	D
Approach Vol, veh/h					1172			2615			3413	
Approach Delay, s/veh					85.1			12.0			85.0	
Approach LOS					F			B			F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		98.6		48.9	30.5	68.1
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		46.0	27.1	65.2
Green Ext Time (p_c), s		10.0		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	58.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	350	170	0	0	0	0	1917	30	317	2574	0
Future Volume (veh/h)	430	350	170	0	0	0	0	1917	30	317	2574	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	410	427	179				0	2018	32	334	2709	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	465	488	401				0	2370	38	294	4223	0
Arrive On Green	0.26	0.26	0.26				0.00	0.92	0.92	0.33	1.00	0.00
Sat Flow, veh/h	1767	1856	1523				0	5301	81	1767	6643	0
Grp Volume(v), veh/h	410	427	179				0	1327	723	334	2709	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1523				0	1689	1839	1767	1596	0
Q Serve(g_s), s	28.9	28.6	12.8				0.0	18.3	18.4	21.6	0.0	0.0
Cycle Q Clear(g_c), s	28.9	28.6	12.8				0.0	18.3	18.4	21.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	465	488	401				0	1559	849	294	4223	0
V/C Ratio(X)	0.88	0.87	0.45				0.00	0.85	0.85	1.14	0.64	0.00
Avail Cap(c_a), veh/h	613	644	528				0	1559	849	294	4223	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.16	0.16	0.09	0.09	0.00
Uniform Delay (d), s/veh	46.0	45.9	40.0				0.0	3.4	3.4	43.4	0.0	0.0
Incr Delay (d2), s/veh	9.6	8.5	0.3				0.0	1.0	1.9	66.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	14.3	4.8				0.0	1.9	2.2	13.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.4	40.3				0.0	4.4	5.3	109.5	0.1	0.0
LnGrp LOS	E	D	D				A	A	A	F	A	A
Approach Vol, veh/h		1016						2050			3043	
Approach Delay, s/veh		52.4						4.7			12.1	
Approach LOS		D						A			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	26.0	64.9	39.1	90.9
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	23.6	20.4	30.9	2.0
Green Ext Time (p_c), s	0.0	6.5	1.1	15.8

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	317	20	436	0	387	0	544	339	90	320	0
Future Volume (veh/h)	300	317	20	436	0	387	0	544	339	90	320	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.85	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	323	341	22	469	0	416	0	585	365	97	344	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	498	485	31	0	0	0	0	789	492	315	1911	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.41	0.41	0.06	0.54	0.00
Sat Flow, veh/h	1767	1719	111		0		0	2031	1209	1767	3618	0
Grp Volume(v), veh/h	323	0	363		0.0		0	532	418	97	344	0
Grp Sat Flow(s),veh/h/ln	1767	0	1830				0	1763	1385	1767	1763	0
Q Serve(g_s), s	8.9	0.0	9.9				0.0	14.3	14.3	1.6	2.8	0.0
Cycle Q Clear(g_c), s	8.9	0.0	9.9				0.0	14.3	14.3	1.6	2.8	0.0
Prop In Lane	1.00		0.06				0.00		0.87	1.00		0.00
Lane Grp Cap(c), veh/h	498	0	516				0	718	564	315	1911	0
V/C Ratio(X)	0.65	0.00	0.70				0.00	0.74	0.74	0.31	0.18	0.00
Avail Cap(c_a), veh/h	733	0	759				0	763	600	394	2160	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.6	0.0	17.9				0.0	14.0	14.0	10.3	6.5	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.8				0.0	6.8	8.5	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	4.0				0.0	6.2	5.1	0.5	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	0.0	19.7				0.0	20.8	22.6	10.5	6.7	0.0
LnGrp LOS	B	A	B				A	C	C	B	A	A
Approach Vol, veh/h		686						950			441	
Approach Delay, s/veh		19.3						21.6			7.5	
Approach LOS		B						C			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	7.5	27.6	20.6	35.1
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	3.6	16.3	11.9	4.8
Green Ext Time (p_c), s	0.0	6.4	2.6	6.4

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	342	168	348	388	20	192	1747	420	0	2164	490
Future Volume (veh/h)	220	342	168	348	388	20	192	1747	420	0	2164	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	197	409	177	265	549	21	202	1839	442	0	2278	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	404	849	325	245	491	19	140	2027	474	0	2099	
Arrive On Green	0.23	0.23	0.23	0.14	0.14	0.14	0.08	0.99	0.99	0.00	0.41	0.00
Sat Flow, veh/h	1767	3711	1421	1767	3545	135	3428	4082	954	0	5233	1572
Grp Volume(v), veh/h	197	409	177	265	287	283	202	1512	769	0	2278	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1421	1767	1856	1825	1714	1689	1658	0	1689	1572
Q Serve(g_s), s	12.6	12.4	14.3	18.0	18.0	18.0	5.3	3.7	5.5	0.0	53.9	0.0
Cycle Q Clear(g_c), s	12.6	12.4	14.3	18.0	18.0	18.0	5.3	3.7	5.5	0.0	53.9	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.58	0.00		1.00
Lane Grp Cap(c), veh/h	404	849	325	245	257	253	140	1677	824	0	2099	
V/C Ratio(X)	0.49	0.48	0.54	1.08	1.12	1.12	1.45	0.90	0.93	0.00	1.09	
Avail Cap(c_a), veh/h	489	1028	394	245	257	253	140	1677	824	0	2099	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.47	0.47	0.47	0.29	0.29	0.29	0.00	0.72	0.00
Uniform Delay (d), s/veh	43.5	43.5	44.2	56.0	56.0	56.0	59.7	0.2	0.2	0.0	38.1	0.0
Incr Delay (d2), s/veh	0.3	0.2	0.5	63.8	74.7	76.2	211.8	2.7	7.2	0.0	45.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	5.8	5.1	12.3	13.7	13.6	6.3	0.8	1.8	0.0	30.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	43.6	44.7	119.8	130.7	132.2	271.5	2.9	7.4	0.0	83.1	0.0
LnGrp LOS	D	D	D	F	F	F	F	A	A	A	F	
Approach Vol, veh/h		783			835			2483			2278	A
Approach Delay, s/veh		43.9			127.7			26.2			83.1	
Approach LOS		D			F			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		70.5		35.6	10.7	59.8		23.9
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		7.5		16.3	7.3	55.9		20.0
Green Ext Time (p_c), s		9.0		1.2	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	314	160	176	436	419	200	1647	140	412	1791	197
Future Volume (veh/h)	314	314	160	176	436	419	200	1647	140	412	1791	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	327	327	167	183	454	436	208	1716	146	429	1866	205
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	359	895	386	171	854	364	258	1820	155	386	1964	214
Arrive On Green	0.10	0.25	0.25	0.10	0.24	0.24	0.08	0.38	0.38	0.23	0.85	0.85
Sat Flow, veh/h	3428	3526	1522	1767	3526	1502	3428	4745	403	3428	4623	504
Grp Volume(v), veh/h	327	327	167	183	454	436	208	1220	642	429	1359	712
Grp Sat Flow(s),veh/h/ln	1714	1763	1522	1767	1763	1502	1714	1689	1771	1714	1689	1750
Q Serve(g_s), s	12.3	9.9	12.0	12.6	14.6	31.5	7.8	45.3	45.6	14.6	40.4	42.6
Cycle Q Clear(g_c), s	12.3	9.9	12.0	12.6	14.6	31.5	7.8	45.3	45.6	14.6	40.4	42.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.29
Lane Grp Cap(c), veh/h	359	895	386	171	854	364	258	1296	679	386	1435	743
V/C Ratio(X)	0.91	0.37	0.43	1.07	0.53	1.20	0.81	0.94	0.94	1.11	0.95	0.96
Avail Cap(c_a), veh/h	359	895	386	171	854	364	282	1343	704	386	1435	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.52	0.52	0.52	0.09	0.09	0.09
Uniform Delay (d), s/veh	57.6	39.9	40.6	58.7	42.8	49.3	59.2	38.7	38.7	50.4	8.7	8.8
Incr Delay (d2), s/veh	26.2	0.1	0.3	88.1	0.3	112.9	7.2	8.8	14.8	54.4	1.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	4.3	4.5	9.8	6.4	23.2	3.6	19.9	22.1	8.3	3.9	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.8	40.0	40.9	146.8	43.2	162.1	66.4	47.4	53.5	104.7	10.6	12.9
LnGrp LOS	F	D	D	F	D	F	E	D	D	F	B	B
Approach Vol, veh/h		821			1073			2070			2500	
Approach Delay, s/veh		57.6			109.2			51.2			27.4	
Approach LOS		E			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	54.8	17.0	37.9	14.2	60.9	18.5	36.4
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	16.6	47.6	14.6	14.0	9.8	44.6	14.3	33.5
Green Ext Time (p_c), s	0.0	2.3	0.0	0.9	0.0	4.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	354	10	745	386	120	10	1205	599	120	1689	308
Future Volume (veh/h)	432	354	10	745	386	120	10	1205	599	120	1689	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	441	361	10	760	394	122	10	1230	611	122	1723	314
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	416	12	612	431	353	21	1982	600	169	1513	648
Arrive On Green	0.17	0.23	0.23	0.18	0.23	0.23	0.01	0.39	0.39	0.10	0.86	0.86
Sat Flow, veh/h	1767	1795	50	3428	1856	1519	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	441	0	371	760	394	122	10	1230	611	122	1723	314
Grp Sat Flow(s),veh/h/ln	1767	0	1845	1714	1856	1519	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	22.6	0.0	25.2	23.2	26.9	7.3	0.7	25.4	50.9	4.5	55.8	3.6
Cycle Q Clear(g_c), s	22.6	0.0	25.2	23.2	26.9	7.3	0.7	25.4	50.9	4.5	55.8	3.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	427	612	431	353	21	1982	600	169	1513	648
V/C Ratio(X)	1.44	0.00	0.87	1.24	0.91	0.35	0.49	0.62	1.02	0.72	1.14	0.48
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	1982	600	232	1513	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00	0.36	0.36	0.36
Uniform Delay (d), s/veh	53.7	0.0	48.0	53.4	48.6	29.6	63.9	31.8	39.6	57.7	9.2	1.7
Incr Delay (d2), s/veh	213.7	0.0	13.6	120.5	17.0	0.2	6.4	1.5	41.5	1.2	65.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.3	0.0	13.2	20.2	14.5	2.7	0.4	10.5	25.7	1.9	17.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	267.4	0.0	61.7	173.9	65.6	29.7	70.3	33.3	81.0	58.9	75.1	2.7
LnGrp LOS	F	A	E	F	E	C	E	C	F	E	F	A
Approach Vol, veh/h		812			1276			1851			2159	
Approach Delay, s/veh		173.4			126.6			49.2			63.6	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	56.6	27.6	35.0	5.9	61.5	27.5	35.1
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	52.9	25.2	27.2	2.7	57.8	24.6	28.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	87.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	863	210	650	1091	90	180
Future Volume (veh/h)	863	210	650	1091	90	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	908	221	684	1148	95	189
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	866	210	560	2370	115	228
Arrive On Green	0.31	0.31	0.32	0.67	0.21	0.21
Sat Flow, veh/h	2874	676	1767	3618	538	1071
Grp Volume(v), veh/h	575	554	684	1148	285	0
Grp Sat Flow(s),veh/h/ln	1763	1694	1767	1763	1615	0
Q Serve(g_s), s	28.0	28.0	28.5	14.2	15.2	0.0
Cycle Q Clear(g_c), s	28.0	28.0	28.5	14.2	15.2	0.0
Prop In Lane		0.40	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	549	527	560	2370	344	0
V/C Ratio(X)	1.05	1.05	1.22	0.48	0.83	0.00
Avail Cap(c_a), veh/h	549	527	560	2370	448	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	31.0	30.7	7.2	33.8	0.0
Incr Delay (d2), s/veh	43.9	45.2	115.4	0.7	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.1	17.6	29.5	4.7	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.9	76.2	146.1	7.9	41.4	0.0
LnGrp LOS	F	F	F	A	D	A
Approach Vol, veh/h	1129			1832	285	
Approach Delay, s/veh	75.5			59.5	41.4	
Approach LOS	E			E	D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	32.5	33.4	65.9	24.1
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	28.5	* 23	54.7	25.0
Max Q Clear Time (g_c+I1), s	30.5	30.0	16.2	17.2
Green Ext Time (p_c), s	0.0	0.0	11.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	63.5
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	8.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	346	1025	30	0	1278
Future Vol, veh/h	0	346	1025	30	0	1278
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	398	1178	34	0	1469

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	626	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	425	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	417	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	65	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	417	-
HCM Lane V/C Ratio	-	-	0.954	-
HCM Control Delay (s)	-	-	65	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	11.1	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1053	1613	1055	1119	158
Future Volume (veh/h)	0	1053	1613	1055	1119	158
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1074	1646	1077	1142	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1555	1555	1256	1286	
Arrive On Green	0.00	0.44	0.44	0.44	0.38	0.00
Sat Flow, veh/h	0	3711	3618	1511	3428	1572
Grp Volume(v), veh/h	0	1074	1646	1077	1142	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1511	1714	1572
Q Serve(g_s), s	0.0	14.1	25.4	25.4	18.0	0.0
Cycle Q Clear(g_c), s	0.0	14.1	25.4	25.4	18.0	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1555	1555	1256	1286	
V/C Ratio(X)	0.00	0.69	1.06	0.86	0.89	
Avail Cap(c_a), veh/h	0	1555	1555	1256	1428	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	16.1	3.3	16.9	0.0
Incr Delay (d2), s/veh	0.0	1.3	40.2	6.1	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	17.1	16.3	7.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	14.3	56.3	9.4	23.4	0.0
LnGrp LOS	A	B	F	A	C	
Approach Vol, veh/h		1074	2723		1142	A
Approach Delay, s/veh		14.3	37.8		23.4	
Approach LOS		B	D		C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		26.8		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		16.1		20.0		27.4
Green Ext Time (p_c), s		4.9		1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	50	0	0	0	145	1228	0	0	1061	170
Future Volume (veh/h)	30	0	50	0	0	0	145	1228	0	0	1061	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	0	59	0	0	0	171	1445	0	0	1248	200
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	25	133	156	263	0	216	3215	0	4	1822	292
Arrive On Green	0.14	0.00	0.14	0.00	0.00	0.00	0.12	0.63	0.00	0.00	0.42	0.42
Sat Flow, veh/h	384	173	940	1333	1856	0	1767	5233	0	1767	4371	700
Grp Volume(v), veh/h	94	0	0	0	0	0	171	1445	0	0	964	484
Grp Sat Flow(s),veh/h/ln	1497	0	0	1333	1856	0	1767	1689	0	1767	1689	1695
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	4.3	6.7	0.0	0.0	10.7	10.7
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.0	0.0	0.0	4.3	6.7	0.0	0.0	10.7	10.7
Prop In Lane	0.37		0.63	1.00		0.00	1.00		0.00	1.00		0.41
Lane Grp Cap(c), veh/h	319	0	0	156	263	0	216	3215	0	4	1408	706
V/C Ratio(X)	0.29	0.00	0.00	0.00	0.00	0.00	0.79	0.45	0.00	0.00	0.68	0.68
Avail Cap(c_a), veh/h	1122	0	0	894	1290	0	257	3215	0	292	1584	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	0.0	0.0	0.0	0.0	19.6	4.3	0.0	0.0	11.0	11.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	10.9	0.1	0.0	0.0	1.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.0	0.0	0.0	2.2	1.2	0.0	0.0	3.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	0.0	0.0	0.0	0.0	30.5	4.4	0.0	0.0	12.1	13.2
LnGrp LOS	B	A	A	A	A	A	C	A	A	A	B	B
Approach Vol, veh/h		94			0			1616			1448	
Approach Delay, s/veh		18.2			0.0			7.2			12.5	
Approach LOS		B						A			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	0.0	34.6	11.4	10.0	24.6	11.4
Change Period (Y+Rc), s	4.4	* 5.4	4.9	4.4	5.4	4.9
Max Green Setting (Gmax), s	7.6	* 21	32.0	6.7	21.6	32.0
Max Q Clear Time (g_c+I1), s	0.0	8.7	4.5	6.3	12.7	0.0
Green Ext Time (p_c), s	0.0	8.8	0.3	0.0	6.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	232.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	486	823	1308	1031	20
Future Vol, veh/h	0	486	823	1308	1031	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	540	914	1453	1146	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	604	1178	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 376	~ 318	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 369	~ 315	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	250.5	$ 343.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 315	-	369	-	-
HCM Lane V/C Ratio	2.903	-	1.463	-	-
HCM Control Delay (s)	$ 889.9	-	250.5	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	79.3	-	28.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	11.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	177	0	2313	2094	208
Future Vol, veh/h	0	177	0	2313	2094	208
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	203	0	2659	2407	239

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1343	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 141	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 138	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 307.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	138	-	-
HCM Lane V/C Ratio	-	1.474	-	-
HCM Control Delay (s)	-	$ 307.2	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	13.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	20	30	20	30	10	420	2226	260	146	1869	259
Future Volume (veh/h)	51	20	30	20	30	10	420	2226	260	146	1869	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.69	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	57	22	33	22	33	11	467	2473	289	162	2077	288
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	73	657	557	31	613	358	272	1255	520	139	896	120
Arrive On Green	0.04	0.35	0.35	0.02	0.33	0.33	0.15	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1086	1767	3526	1460	1767	3101	417
Grp Volume(v), veh/h	57	22	33	22	33	11	467	2473	289	162	1152	1213
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1086	1767	1763	1460	1767	1763	1755
Q Serve(g_s), s	3.9	0.9	1.7	1.5	1.5	0.8	18.6	43.0	19.2	9.5	34.9	34.9
Cycle Q Clear(g_c), s	3.9	0.9	1.7	1.5	1.5	0.8	18.6	43.0	19.2	9.5	34.9	34.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	73	657	557	31	613	358	272	1255	520	139	509	507
V/C Ratio(X)	0.78	0.03	0.06	0.72	0.05	0.03	1.72	1.97	0.56	1.17	2.26	2.39
Avail Cap(c_a), veh/h	75	657	557	85	615	360	272	1255	520	139	509	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	25.5	25.7	59.0	27.6	27.4	51.1	38.9	31.2	55.6	42.9	42.9
Incr Delay (d2), s/veh	36.2	0.0	0.0	11.2	0.0	0.0	337.3	439.4	1.5	127.6	574.1	632.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.4	0.6	0.8	0.7	0.2	33.7	94.8	7.0	9.2	96.2	104.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	25.5	25.7	70.2	27.6	27.4	388.3	478.3	32.7	183.3	617.0	675.1
LnGrp LOS	F	C	C	E	C	C	F	F	C	F	F	F
Approach Vol, veh/h		112			66			3229			2527	
Approach Delay, s/veh		60.2			41.8			425.4			617.1	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.7	6.5	47.7	23.0	43.6	9.4	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	11.5	45.0	3.5	3.7	20.6	36.9	5.9	3.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	495.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1973.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2099	2412	2906	1789	130
Future Vol, veh/h	0	2099	2412	2906	1789	130
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2282	2622	3159	1945	141

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	993	2096	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 242	~ 256	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 237	~ 254	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 3919.1	$ 1918.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 254	-	237	-	-
HCM Lane V/C Ratio	10.322	-	9.627	-	-
HCM Control Delay (s)	$ 4229.6	-	$ 3919.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	299.3	-	258.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	80	164	430	300	10	416	110	270	5	50	10
Future Volume (veh/h)	5	80	164	430	300	10	416	110	270	5	50	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	6	104	213	558	390	13	540	143	351	6	65	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	208	426	382	716	24	420	87	214	85	635	120
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	966	518	1060	1041	1781	59	757	200	492	48	1460	276
Grp Volume(v), veh/h	6	0	317	558	0	403	1034	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	966	0	1578	1041	0	1841	1449	0	0	1784	0	0
Q Serve(g_s), s	0.3	0.0	9.0	15.1	0.0	10.1	24.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	9.0	24.1	0.0	10.1	26.1	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.03	0.52		0.34	0.07		0.15
Lane Grp Cap(c), veh/h	346	0	634	382	0	739	722	0	0	840	0	0
V/C Ratio(X)	0.02	0.00	0.50	1.46	0.00	0.55	1.43	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	346	0	634	382	0	739	722	0	0	840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	0.0	13.4	24.8	0.0	13.8	18.4	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	222.2	0.0	0.9	202.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	28.8	0.0	3.8	50.0	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	14.5	247.0	0.0	14.6	221.2	0.0	0.0	10.1	0.0	0.0
LnGrp LOS	B	A	B	F	A	B	F	A	A	B	A	A
Approach Vol, veh/h		323			961			1034			84	
Approach Delay, s/veh		14.5			149.5			221.2			10.1	
Approach LOS		B			F			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	29.0	31.0	29.0	31.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	24.1	26.1	24.1	26.1
Max Q Clear Time (g_c+I1), s	12.3	3.7	26.1	28.1
Green Ext Time (p_c), s	2.4	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	157.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	20	40	390	370	796	506	50	0	324	390
Future Volume (veh/h)	0	0	20	40	390	370	796	506	50	0	324	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	25	49	481	457	983	625	62	0	400	481
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	305	278	114	0	0	0	333	401
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	49	841	768	0	0	0	0	754	906
Grp Volume(v), veh/h	0	0	25	987	0	0	1670	0	0	0	0	881
Grp Sat Flow(s),veh/h/ln	0	0	1572	1659	0	0	0	0	0	0	0	1660
Q Serve(g_s), s	0.0	0.0	0.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1
Cycle Q Clear(g_c), s	0.0	0.0	0.5	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	22.1
Prop In Lane	0.00		1.00	0.05		0.46	0.59		0.04	0.00		0.55
Lane Grp Cap(c), veh/h	0	0	569	676	0	0	114	0	0	0	0	734
V/C Ratio(X)	0.00	0.00	0.04	1.46	0.00	0.00	14.60	0.00	0.00	0.00	0.00	1.20
Avail Cap(c_a), veh/h	0	0	569	676	0	0	114	0	0	0	0	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	25.0	0.0	0.0	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	215.1	0.0	0.0	6137.0	0.0	0.0	0.0	0.0	103.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	47.2	0.0	0.0	196.2	0.0	0.0	0.0	0.0	27.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.4	232.0	0.0	0.0	6162.0	0.0	0.0	0.0	0.0	117.1
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		25			987			1670			881	
Approach Delay, s/veh		10.4			232.0			6162.0			117.1	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0	23.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	24.1	2.5	24.1	20.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2981.5
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	423.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	450	1210	0	809	104	0
Future Vol, veh/h	450	1210	0	809	104	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	536	1440	0	963	124	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	504.5	311.2	13.2
HCM LOS	F	F	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	809	450	1210	104
LT Vol	0	450	0	0
Through Vol	809	0	0	104
RT Vol	0	0	1210	0
Lane Flow Rate	963	536	1440	124
Geometry Grp	2	7	7	2
Degree of Util (X)	1.639	1.075	2.411	0.242
Departure Headway (Hd)	5.993	8.487	7.252	7.725
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	434	519	468
Service Time	3.993	6.187	4.952	5.725
HCM Lane V/C Ratio	1.563	1.235	2.775	0.265
HCM Control Delay	311.2	94.3	657.1	13.2
HCM Lane LOS	F	F	F	B
HCM 95th-tile Q	54.7	15.2	92.4	0.9

Intersection	
Intersection Delay, s/veh	357.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	300	1047	34	50	5	762	5	146	5	5	5
Future Vol, veh/h	5	300	1047	34	50	5	762	5	146	5	5	5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	341	1190	39	57	6	866	6	166	6	6	6
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	370.9	15.5	377.8	13.2
HCM LOS	F	C	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	83%	2%	0%	38%	33%
Vol Thru, %	1%	98%	0%	56%	33%
Vol Right, %	16%	0%	100%	6%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	913	305	1047	89	15
LT Vol	762	5	0	34	5
Through Vol	5	300	0	50	5
RT Vol	146	0	1047	5	5
Lane Flow Rate	1038	347	1190	101	17
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.784	0.648	1.991	0.204	0.035
Departure Headway (Hd)	6.916	8.488	7.755	9.951	9.853
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	540	430	488	363	366
Service Time	4.916	6.188	5.455	7.951	7.853
HCM Lane V/C Ratio	1.922	0.807	2.439	0.278	0.046
HCM Control Delay	377.8	25.5	471.5	15.5	13.2
HCM Lane LOS	F	D	F	C	B
HCM 95th-tile Q	57.1	4.5	63	0.8	0.1

Intersection	
Intersection Delay, s/veh	246.5
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	100	80	818	230	856
Future Vol, veh/h	95	100	80	818	230	856
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	104	83	852	240	892
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13.9	234.8	297.9
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	9%	100%	0%	0%
Vol Thru, %	91%	0%	0%	21%
Vol Right, %	0%	0%	100%	79%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	898	95	100	1086
LT Vol	80	95	0	0
Through Vol	818	0	0	230
RT Vol	0	0	100	856
Lane Flow Rate	935	99	104	1131
Geometry Grp	2	7	7	2
Degree of Util (X)	1.46	0.224	0.201	1.611
Departure Headway (Hd)	6.33	9.495	8.238	5.675
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	580	381	439	656
Service Time	4.33	7.195	5.938	3.675
HCM Lane V/C Ratio	1.612	0.26	0.237	1.724
HCM Control Delay	234.8	14.9	13	297.9
HCM Lane LOS	F	B	B	F
HCM 95th-tile Q	40.4	0.8	0.7	55.4

Intersection	
Intersection Delay, s/veh	108.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	15	818	0	80	40	30	300	0
Future Vol, veh/h	0	0	0	10	15	818	0	80	40	30	300	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	17	919	0	90	45	34	337	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	155.7	11.9	21.6
HCM LOS	-	F	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	9%
Vol Thru, %	100%	0%	100%	2%	91%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	40	0	843	330
LT Vol	0	0	0	10	30
Through Vol	80	0	0	15	300
RT Vol	0	40	0	818	0
Lane Flow Rate	90	45	0	947	371
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.179	0.081	0	1.285	0.642
Departure Headway (Hd)	8.049	7.324	7.35	4.885	6.969
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	449	492	0	739	523
Service Time	5.749	5.024	5.35	2.977	4.969
HCM Lane V/C Ratio	0.2	0.091	0	1.281	0.709
HCM Control Delay	12.5	10.7	10.4	155.7	21.6
HCM Lane LOS	B	B	N	F	C
HCM 95th-tile Q	0.6	0.3	0	35.6	4.5

Intersection	
Intersection Delay, s/veh	48.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	186	180	150	0	0	0	90	60	160	320	170	14
Future Vol, veh/h	186	180	150	0	0	0	90	60	160	320	170	14
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	194	188	156	0	0	0	94	63	167	333	177	15
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	55.7	19.6	57.8
HCM LOS	F	C	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	36%	63%
Vol Thru, %	19%	35%	34%
Vol Right, %	52%	29%	3%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	310	516	504
LT Vol	90	186	320
Through Vol	60	180	170
RT Vol	160	150	14
Lane Flow Rate	323	538	525
Geometry Grp	1	1	1
Degree of Util (X)	0.604	0.966	0.971
Departure Headway (Hd)	6.732	6.468	6.658
Convergence, Y/N	Yes	Yes	Yes
Cap	533	559	541
Service Time	4.807	4.523	4.723
HCM Lane V/C Ratio	0.606	0.962	0.97
HCM Control Delay	19.6	55.7	57.8
HCM Lane LOS	C	F	F
HCM 95th-tile Q	4	13	13

29: Washington St & San Diego Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	200	370	80	300	951	0	0	960	680
Future Volume (veh/h)	0	0	0	200	370	80	300	951	0	0	960	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				211	389	84	316	1001	0	0	1011	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				305	614	132	618	2398	0	0	1557	677
Arrive On Green				0.20	0.20	0.20	0.36	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1502	3021	649	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				250	213	220	316	1001	0	0	1011	716
Grp Sat Flow(s),veh/h/ln				1780	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.9	37.1
Cycle Q Clear(g_c), s				10.9	9.7	9.9	6.1	0.0	0.0	0.0	18.9	37.1
Prop In Lane				0.84		0.38	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				362	343	346	618	2398	0	0	1557	677
V/C Ratio(X)				0.69	0.62	0.64	0.51	0.42	0.00	0.00	0.65	1.06
Avail Cap(c_a), veh/h				553	525	529	618	2398	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.68	0.68	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.0	30.5	30.6	24.0	0.0	0.0	0.0	18.4	23.5
Incr Delay (d2), s/veh				0.9	0.7	0.7	0.5	0.4	0.0	0.0	2.1	50.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	3.9	4.0	2.2	0.1	0.0	0.0	7.6	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.9	31.2	31.4	24.5	0.4	0.0	0.0	20.5	74.2
LnGrp LOS				C	C	C	C	A	A	A	C	F
Approach Vol, veh/h					684			1317			1727	
Approach Delay, s/veh					31.5			6.1			42.7	
Approach LOS					C			A			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			20.0	42.0		22.0				
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9				
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1				
Max Q Clear Time (g_c+I1), s		2.0			8.1	39.1		12.9				
Green Ext Time (p_c), s		11.4			0.0	0.0		2.4				
Intersection Summary												
HCM 6th Ctrl Delay			27.8									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

30: Washington St & Hancock St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	380	240	0	0	0	0	651	160	460	700	0
Future Volume (veh/h)	600	380	240	0	0	0	0	651	160	460	700	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	619	392	247				0	671	165	474	722	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	932	489	317				0	1142	495	558	1749	0
Arrive On Green	0.26	0.26	0.26				0.00	0.40	0.40	0.16	0.62	0.00
Sat Flow, veh/h	3534	1856	1202				0	2897	1224	3428	2897	0
Grp Volume(v), veh/h	619	392	247				0	671	165	474	722	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1202				0	1411	1224	1714	1411	0
Q Serve(g_s), s	13.1	16.6	16.0				0.0	15.6	7.8	11.3	11.0	0.0
Cycle Q Clear(g_c), s	13.1	16.6	16.0				0.0	15.6	7.8	11.3	11.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	932	489	317				0	1142	495	558	1749	0
V/C Ratio(X)	0.66	0.80	0.78				0.00	0.59	0.33	0.85	0.41	0.00
Avail Cap(c_a), veh/h	1140	599	388				0	1142	495	678	1749	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.93	0.93	0.81	0.81	0.00
Uniform Delay (d), s/veh	27.6	28.9	28.7				0.0	19.5	17.2	34.2	8.2	0.0
Incr Delay (d2), s/veh	0.6	5.1	6.3				0.0	2.1	1.7	6.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.8	5.0				0.0	5.2	2.3	5.1	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	34.0	34.9				0.0	21.6	18.9	40.2	8.7	0.0
LnGrp LOS	C	C	C				A	C	B	D	A	A
Approach Vol, veh/h		1258						836			1196	
Approach Delay, s/veh		31.3						21.1			21.2	
Approach LOS		C						C			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.1	38.9		27.0		57.0						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1						
Max Q Clear Time (g_c+I1), s	13.3	17.6		18.6		13.0						
Green Ext Time (p_c), s	0.4	3.8		2.5		6.5						
Intersection Summary												
HCM 6th Ctrl Delay			25.0									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	70	60	50	170	140	611	0	0	720	220
Future Volume (veh/h)	30	0	70	60	50	170	140	611	0	0	720	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	31	0	73	62	52	177	146	636	0	0	750	229
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	28	0	66	342	359	287	176	1502	0	0	1036	448
Arrive On Green	0.06	0.00	0.06	0.19	0.19	0.19	0.10	0.53	0.00	0.00	0.37	0.37
Sat Flow, veh/h	478	0	1125	1767	1856	1486	1767	2897	0	0	2897	1220
Grp Volume(v), veh/h	104	0	0	62	52	177	146	636	0	0	750	229
Grp Sat Flow(s),veh/h/ln	1603	0	0	1767	1856	1486	1767	1411	0	0	1411	1220
Q Serve(g_s), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	9.3	0.0	0.0	15.7	10.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	2.0	1.6	7.5	5.6	9.3	0.0	0.0	15.7	10.0
Prop In Lane	0.30		0.70	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	94	0	0	342	359	287	176	1502	0	0	1036	448
V/C Ratio(X)	1.11	0.00	0.00	0.18	0.14	0.62	0.83	0.42	0.00	0.00	0.72	0.51
Avail Cap(c_a), veh/h	94	0	0	671	705	564	176	1880	0	0	1397	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	23.1	22.9	25.3	30.3	9.7	0.0	0.0	18.7	16.9
Incr Delay (d2), s/veh	126.1	0.0	0.0	0.1	0.1	0.8	27.9	0.1	0.0	0.0	1.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	0.8	0.7	2.6	3.6	2.5	0.0	0.0	4.9	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.3	0.0	0.0	23.2	23.0	26.1	58.1	9.7	0.0	0.0	20.1	18.0
LnGrp LOS	F	A	A	C	C	C	E	A	A	A	C	B
Approach Vol, veh/h		104			291			782			979	
Approach Delay, s/veh		158.3			24.9			18.8			19.6	
Approach LOS		F			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		40.8		8.0	11.3	29.5		19.6				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		11.3		6.0	7.6	17.7		9.5				
Green Ext Time (p_c), s		3.2		0.0	0.0	6.5		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	60	80	0	0	0	0	380	50	180	260	0
Future Volume (veh/h)	371	60	80	0	0	0	0	380	50	180	260	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	460	0	89				0	422	56	200	289	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	959	0	743				0	651	86	288	551	0
Arrive On Green	0.27	0.00	0.27				0.00	0.21	0.21	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1524				0	3198	409	1767	3544	0
Grp Volume(v), veh/h	460	0	89				0	238	240	200	289	0
Grp Sat Flow(s),veh/h/ln	1767	0	1524				0	1763	1751	1767	1689	0
Q Serve(g_s), s	4.4	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Cycle Q Clear(g_c), s	4.4	0.0	1.3				0.0	5.0	5.1	4.3	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	959	0	743				0	369	367	288	551	0
V/C Ratio(X)	0.48	0.00	0.12				0.00	0.64	0.65	0.69	0.52	0.00
Avail Cap(c_a), veh/h	2543	0	1426				0	606	602	312	597	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	5.8				0.0	14.7	14.7	16.1	15.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0				0.0	0.7	0.7	6.2	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.5				0.0	1.7	1.8	2.0	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	5.9				0.0	15.4	15.5	22.2	16.5	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		549						478			489	
Approach Delay, s/veh		11.5						15.5			18.8	
Approach LOS		B						B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				12.5		17.2		10.9				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				7.1		6.4		6.3				
Green Ext Time (p_c), s				1.1		1.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	200	100	410	700	154	250	503	100	106	561	140
Future Volume (veh/h)	90	200	100	410	700	154	250	503	100	106	561	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	103	230	115	471	805	177	287	578	115	122	645	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	530	528	183	504	111	126	1003	195	128	1023	250
Arrive On Green	0.05	0.34	0.34	0.12	0.41	0.41	0.07	0.24	0.24	0.09	0.25	0.25
Sat Flow, veh/h	1767	1537	1530	1464	1214	267	1767	4211	817	1464	4021	983
Grp Volume(v), veh/h	103	230	115	471	0	982	287	461	232	122	539	267
Grp Sat Flow(s),veh/h/ln	1767	1537	1530	1464	0	1481	1767	1689	1651	1464	1689	1627
Q Serve(g_s), s	5.1	10.7	4.9	11.6	0.0	38.5	6.6	11.2	11.6	7.7	13.2	13.6
Cycle Q Clear(g_c), s	5.1	10.7	4.9	11.6	0.0	38.5	6.6	11.2	11.6	7.7	13.2	13.6
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.50	1.00		0.60
Lane Grp Cap(c), veh/h	97	530	528	183	0	614	126	805	393	128	859	414
V/C Ratio(X)	1.06	0.43	0.22	2.57	0.00	1.60	2.28	0.57	0.59	0.95	0.63	0.64
Avail Cap(c_a), veh/h	97	530	528	183	0	614	126	1066	521	128	1121	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	23.4	21.5	40.6	0.0	27.2	43.1	31.2	31.3	42.2	30.7	30.8
Incr Delay (d2), s/veh	108.7	0.2	0.1	724.1	0.0	276.8	602.2	1.2	2.6	65.0	1.4	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.8	1.7	40.9	0.0	60.1	23.9	4.6	4.8	5.1	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	152.6	23.6	21.6	764.7	0.0	304.0	645.3	32.4	34.0	107.2	32.1	33.8
LnGrp LOS	F	C	C	F	A	F	F	C	C	F	C	C
Approach Vol, veh/h		448			1453			980			928	
Approach Delay, s/veh		52.8			453.3			212.3			42.4	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	27.4	16.0	36.9	11.0	28.9	9.5	43.4
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	9.7	13.6	13.6	12.7	8.6	15.6	7.1	40.5
Green Ext Time (p_c), s	0.0	6.4	0.0	1.0	0.0	7.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	244.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	561	1140	100	80	1410	100	250	422	90	110	336	955
Future Volume (veh/h)	561	1140	100	80	1410	100	250	422	90	110	336	955
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	572	1163	102	82	1439	102	255	431	92	112	343	974
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	386	1595	140	102	1088	77	134	1005	207	134	1219	710
Arrive On Green	0.22	0.49	0.49	0.06	0.33	0.33	0.08	0.24	0.24	0.08	0.24	0.24
Sat Flow, veh/h	1767	3272	287	1767	3333	235	1767	4181	862	1767	5066	1520
Grp Volume(v), veh/h	572	626	639	82	758	783	255	345	178	112	343	974
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1767	1763	1805	1767	1689	1665	1767	1689	1520
Q Serve(g_s), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	12.1	12.7	8.8	7.7	33.7
Cycle Q Clear(g_c), s	30.6	39.5	39.7	6.4	45.7	45.7	10.6	12.1	12.7	8.8	7.7	33.7
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	386	859	875	102	575	589	134	812	400	134	1219	710
V/C Ratio(X)	1.48	0.73	0.73	0.80	1.32	1.33	1.91	0.43	0.44	0.83	0.28	1.37
Avail Cap(c_a), veh/h	386	859	875	121	575	589	134	812	400	172	1219	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	28.5	28.6	65.2	47.1	47.2	64.7	45.0	45.2	63.8	43.3	38.1
Incr Delay (d2), s/veh	229.9	3.5	3.5	23.2	154.6	159.6	434.2	1.6	3.5	19.2	0.6	176.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.3	17.4	17.8	3.6	44.6	46.5	20.9	5.3	5.7	4.7	3.3	58.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	284.6	32.0	32.0	88.4	201.7	206.7	498.9	46.6	48.8	83.0	43.9	214.6
LnGrp LOS	F	C	C	F	F	F	F	D	D	F	D	F
Approach Vol, veh/h		1837			1623			778			1429	
Approach Delay, s/veh		110.7			198.4			195.3			163.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	39.0	12.5	73.5	15.0	39.0	35.0	51.0
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	10.8	14.7	8.4	41.7	12.6	35.7	32.6	47.7
Green Ext Time (p_c), s	0.0	3.7	0.0	14.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	160.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1417	2530	2930	94	86	100
Future Volume (veh/h)	1417	2530	2930	94	86	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1524	2720	3151	0	92	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4176	2755		153	136
Arrive On Green	0.24	0.82	0.54	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1524	2720	3151	0	92	108
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	24.0	64.2	0.0	5.9	7.9
Cycle Q Clear(g_c), s	28.7	24.0	64.2	0.0	5.9	7.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4176	2755		153	136
V/C Ratio(X)	1.83	0.65	1.14		0.60	0.79
Avail Cap(c_a), veh/h	834	4176	2755		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	3.9	26.9	0.0	51.9	52.9
Incr Delay (d2), s/veh	377.2	0.8	69.5	0.0	1.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	55.7	6.0	42.0	0.0	2.7	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	421.8	4.7	96.4	0.0	53.3	56.8
LnGrp LOS	F	A	F		D	E
Approach Vol, veh/h		4244	3151	A	200	
Approach Delay, s/veh		154.5	96.4		55.2	
Approach LOS		F	F		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		102.6		15.4	33.1	69.5
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		26.0		9.9	30.7	66.2
Green Ext Time (p_c), s		51.0		0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	127.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	84	120	214	176	251	260	1180	149	273	790	240
Future Volume (veh/h)	90	84	120	214	176	251	260	1180	149	273	790	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	88	125	223	183	261	271	1229	155	284	823	250
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	154	380	309	81	382	308	348	1079	135	318	1487	733
Arrive On Green	0.04	0.20	0.20	0.05	0.21	0.21	0.10	0.34	0.34	0.18	0.42	0.42
Sat Flow, veh/h	3428	1856	1510	1767	1856	1497	3428	3142	395	1767	3526	1570
Grp Volume(v), veh/h	94	88	125	223	183	261	271	687	697	284	823	250
Grp Sat Flow(s),veh/h/ln	1714	1856	1510	1767	1856	1497	1714	1763	1774	1767	1763	1570
Q Serve(g_s), s	2.3	3.4	6.2	4.0	7.5	14.6	6.7	29.8	29.8	13.6	15.3	8.8
Cycle Q Clear(g_c), s	2.3	3.4	6.2	4.0	7.5	14.6	6.7	29.8	29.8	13.6	15.3	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	154	380	309	81	382	308	348	605	609	318	1487	733
V/C Ratio(X)	0.61	0.23	0.40	2.74	0.48	0.85	0.78	1.14	1.14	0.89	0.55	0.34
Avail Cap(c_a), veh/h	190	663	539	81	637	514	438	605	609	326	1487	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	28.8	29.9	41.4	30.4	33.1	38.0	28.5	28.5	34.8	18.9	14.7
Incr Delay (d2), s/veh	1.5	0.3	0.9	815.5	0.3	2.9	5.1	79.9	83.2	24.0	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.5	2.2	20.1	3.2	5.2	2.9	24.9	25.7	7.7	5.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	29.1	30.8	856.9	30.7	36.1	43.2	108.4	111.7	58.7	19.5	15.1
LnGrp LOS	D	C	C	F	C	D	D	F	F	E	B	B
Approach Vol, veh/h		307			667			1655			1357	
Approach Delay, s/veh		33.8			309.0			99.1			26.9	
Approach LOS		C			F			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	35.1	8.4	23.3	13.2	41.9	8.3	23.4
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	15.6	31.8	6.0	8.2	8.7	17.3	4.3	16.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.1	8.5	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	104.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1434	100	370	424	0	0	0	0	190	0	879
Future Volume (veh/h)	0	1434	100	370	424	0	0	0	0	190	0	879
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1559	109	402	461	0				207	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	2307	1008	337	2777	0				234	0	
Arrive On Green	0.00	0.65	0.65	0.20	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1559	109	402	461	0				207	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	32.9	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	32.9	3.2	11.8	0.0	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2307	1008	337	2777	0				234	0	
V/C Ratio(X)	0.00	0.68	0.11	1.19	0.17	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2307	1008	337	2777	0				772	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.61	0.61	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	7.7	48.2	0.0	0.0				51.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	103.5	0.1	0.0				4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.5	1.0	9.3	0.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.0	7.7	151.7	0.1	0.0				55.5	0.0	0.0
LnGrp LOS	A	B	A	F	A	A				E	A	
Approach Vol, veh/h		1668			863						207	A
Approach Delay, s/veh		12.7			70.7						55.5	
Approach LOS		B			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	83.5		20.5		99.5
Change Period (Y+Rc), s	* 4.2	5.0		4.6		5.0
Max Green Setting (Gmax), s	* 12	42.0		52.4		58.0
Max Q Clear Time (g_c+I1), s	13.8	34.9		15.8		2.0
Green Ext Time (p_c), s	0.0	4.4		0.1		2.1

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1047	576	0	0	494	310	300	10	440	0	0	0
Future Volume (veh/h)	1047	576	0	0	494	310	300	10	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1091	600	0	0	515	323	312	10	458			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1202	2365	0	0	561	351	420	13	385			
Arrive On Green	0.59	1.00	0.00	0.00	0.27	0.27	0.24	0.24	0.24			
Sat Flow, veh/h	3428	3618	0	0	2135	1277	1715	55	1572			
Grp Volume(v), veh/h	1091	600	0	0	444	394	322	0	458			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1557	1770	0	1572			
Q Serve(g_s), s	33.8	0.0	0.0	0.0	29.3	29.5	20.2	0.0	29.4			
Cycle Q Clear(g_c), s	33.8	0.0	0.0	0.0	29.3	29.5	20.2	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		0.82	0.97		1.00			
Lane Grp Cap(c), veh/h	1202	2365	0	0	484	427	434	0	385			
V/C Ratio(X)	0.91	0.25	0.00	0.00	0.92	0.92	0.74	0.00	1.19			
Avail Cap(c_a), veh/h	1202	2365	0	0	521	461	434	0	385			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.2	0.0	0.0	0.0	42.2	42.3	41.8	0.0	45.3			
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	24.9	27.6	6.0	0.0	108.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.2	0.0	0.0	0.0	15.9	14.4	9.5	0.0	34.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	0.0	0.0	67.1	69.9	47.8	0.0	153.4			
LnGrp LOS	C	A	A	A	E	E	D	A	F			
Approach Vol, veh/h		1691			838			780				
Approach Delay, s/veh		15.7			68.4			109.8				
Approach LOS		B			E			F				

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		34.0	47.6	38.4
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5
Max Green Setting (Gmax), s		80.5		29.4	40.8	* 36
Max Q Clear Time (g_c+I1), s		2.0		31.4	35.8	31.5
Green Ext Time (p_c), s		2.8		0.0	2.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	758	10	1116	1062	0	414	
Future Volume (veh/h)	758	10	1116	1062	0	414	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No		No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856	
Adj Flow Rate, veh/h	825	0	1200	0	0	445	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	3	0	3	3	0	3	
Cap, veh/h	948	432	1670		0	1670	
Arrive On Green	0.27	0.00	0.47	0.00	0.00	0.47	
Sat Flow, veh/h	3534	1610	3618	1572	0	3711	
Grp Volume(v), veh/h	825	0	1200	0	0	445	
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763	
Q Serve(g_s), s	12.3	0.0	14.9	0.0	0.0	4.2	
Cycle Q Clear(g_c), s	12.3	0.0	14.9	0.0	0.0	4.2	
Prop In Lane	1.00	1.00		1.00	0.00		
Lane Grp Cap(c), veh/h	948	432	1670		0	1670	
V/C Ratio(X)	0.87	0.00	0.72		0.00	0.27	
Avail Cap(c_a), veh/h	983	448	1670		0	1670	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	
Uniform Delay (d), s/veh	19.2	0.0	11.6	0.0	0.0	8.7	
Incr Delay (d2), s/veh	8.5	0.0	2.7	0.0	0.0	0.4	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.6	0.0	5.3	0.0	0.0	1.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	27.7	0.0	14.3	0.0	0.0	9.1	
LnGrp LOS	C	A	B		A	A	
Approach Vol, veh/h	825		1200	A		445	
Approach Delay, s/veh	27.7		14.3			9.1	
Approach LOS	C		B			A	
Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		31.5				31.5	23.5
Change Period (Y+Rc), s		5.5				* 5.5	8.7
Max Green Setting (Gmax), s		25.5				* 26	15.3
Max Q Clear Time (g_c+I1), s		16.9				6.2	14.3
Green Ext Time (p_c), s		6.0				4.6	0.5
Intersection Summary							
HCM 6th Ctrl Delay			17.8				
HCM 6th LOS			B				

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	560	120	90	270	808
Future Volume (vph)	290	560	120	90	270	808
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	322	622	133	100	300	898

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	322	622	233	300	898
Volume Left (vph)	322	0	0	300	0
Volume Right (vph)	0	0	100	0	898
Hadj (s)	0.55	0.05	-0.21	0.25	-0.55
Departure Headway (s)	6.5	6.0	5.8	6.5	3.2
Degree Utilization, x	0.58	1.03	0.38	0.54	0.80
Capacity (veh/h)	552	608	598	547	1121
Control Delay (s)	16.9	68.7	12.4	16.8	17.5
Approach Delay (s)	51.0		12.4	17.3	
Approach LOS	F		B	C	

Intersection Summary			
Delay	30.2		
Level of Service	D		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	878	560	668	260	290	40
Future Volume (veh/h)	878	560	668	260	290	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	944	602	718	0	312	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	791	1385	891		399	887
Arrive On Green	0.45	0.75	0.25	0.00	0.12	0.12
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	944	602	718	0	312	43
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	40.8	11.1	17.4	0.0	8.1	1.1
Cycle Q Clear(g_c), s	40.8	11.1	17.4	0.0	8.1	1.1
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	791	1385	891		399	887
V/C Ratio(X)	1.19	0.43	0.81		0.78	0.05
Avail Cap(c_a), veh/h	791	1537	1180		827	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	4.3	32.0	0.0	39.1	8.9
Incr Delay (d2), s/veh	99.4	0.1	2.3	0.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.7	3.2	7.5	0.0	3.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	124.6	4.4	34.2	0.0	40.4	8.9
LnGrp LOS	F	A	C		D	A
Approach Vol, veh/h		1546	718	A	355	
Approach Delay, s/veh		77.8	34.2		36.6	
Approach LOS		E	C		D	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	74.0		17.1	45.0	29.0
Change Period (Y+Rc), s	6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s	75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s	13.1		10.1	42.8	19.4
Green Ext Time (p_c), s	2.8		0.6	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	60.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	30	532	0	0	20	711	1128	5	10	568	100
Future Volume (veh/h)	330	30	532	0	0	20	711	1128	5	10	568	100
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	391	0	591				790	1253	6	11	631	111
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	817	0	904				1221	2143	10	19	726	127
Arrive On Green	0.23	0.00	0.23				0.71	1.00	1.00	0.01	0.24	0.24
Sat Flow, veh/h	3534	0	1488				3428	3597	17	1767	2968	521
Grp Volume(v), veh/h	391	0	591				790	614	645	11	374	368
Grp Sat Flow(s),veh/h/ln	1767	0	1488				1714	1763	1852	1767	1763	1726
Q Serve(g_s), s	8.6	0.0	0.0				11.1	0.0	0.0	0.6	18.3	18.4
Cycle Q Clear(g_c), s	8.6	0.0	0.0				11.1	0.0	0.0	0.6	18.3	18.4
Prop In Lane	1.00		1.00				1.00		0.01	1.00		0.30
Lane Grp Cap(c), veh/h	817	0	904				1221	1050	1103	19	431	422
V/C Ratio(X)	0.48	0.00	0.65				0.65	0.58	0.58	0.58	0.87	0.87
Avail Cap(c_a), veh/h	1178	0	1056				1221	1050	1103	100	460	451
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	12.3				9.9	0.0	0.0	44.3	32.6	32.6
Incr Delay (d2), s/veh	0.7	0.0	1.6				0.1	0.2	0.2	10.1	20.3	21.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	15.2				2.6	0.1	0.1	0.3	10.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	13.9				10.0	0.2	0.2	54.4	52.9	53.7
LnGrp LOS	C	A	B				B	A	A	D	D	D
Approach Vol, veh/h		982						2049			753	
Approach Delay, s/veh		20.5						4.0			53.3	
Approach LOS		C						A			D	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	5.4	58.5		26.1	37.0	26.9
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0		10.6	13.1	20.4
Green Ext Time (p_c), s	0.0	12.9		7.1	1.3	1.6

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	10	120	10	310	10	1499	130	270	840	20
Future Volume (veh/h)	20	10	10	120	10	310	10	1499	130	270	840	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.96	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	21	10	10	125	10	323	10	1561	135	281	875	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	94	75	168	25	341	17	1473	127	351	1780	43
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.01	0.31	0.31	0.20	0.51	0.51
Sat Flow, veh/h	426	290	231	360	77	1047	1767	4717	408	1767	3514	84
Grp Volume(v), veh/h	41	0	0	458	0	0	10	1117	579	281	439	457
Grp Sat Flow(s),veh/h/ln	947	0	0	1484	0	0	1767	1689	1748	1767	1763	1836
Q Serve(g_s), s	0.0	0.0	0.0	24.0	0.0	0.0	0.5	28.1	28.1	13.6	14.7	14.7
Cycle Q Clear(g_c), s	1.4	0.0	0.0	27.1	0.0	0.0	0.5	28.1	28.1	13.6	14.7	14.7
Prop In Lane	0.51		0.24	0.27		0.71	1.00		0.23	1.00		0.05
Lane Grp Cap(c), veh/h	369	0	0	534	0	0	17	1054	546	351	893	930
V/C Ratio(X)	0.11	0.00	0.00	0.86	0.00	0.00	0.58	1.06	1.06	0.80	0.49	0.49
Avail Cap(c_a), veh/h	380	0	0	547	0	0	102	1054	546	351	893	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.29	0.29	0.29	0.70	0.70	0.70
Uniform Delay (d), s/veh	20.9	0.0	0.0	29.5	0.0	0.0	44.4	31.0	31.0	34.4	14.6	14.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	11.9	0.0	0.0	3.2	33.7	39.1	8.3	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	11.0	0.0	0.0	0.2	15.9	17.3	6.5	5.9	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	41.4	0.0	0.0	47.6	64.7	70.1	42.7	15.9	15.9
LnGrp LOS	C	A	A	D	A	A	D	F	F	D	B	B
Approach Vol, veh/h		41			458			1706			1177	
Approach Delay, s/veh		21.0			41.4			66.4			22.3	
Approach LOS		C			D			E			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.8	33.0		34.2	5.3	50.5		34.2
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	15.6	30.1		3.4	2.5	16.7		29.1
Green Ext Time (p_c), s	0.1	0.0		0.1	0.0	8.2		0.3

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1309	190	200	820	0	220	0	330	0	0	0
Future Volume (veh/h)	0	1309	190	200	820	0	220	0	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.93		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1364	198	208	854	0	229	0	344	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1406	204	161	1590	0	468	0	411	0	496	0
Arrive On Green	0.00	0.41	0.41	0.09	0.57	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	3564	498	1767	2849	0	1310	0	1538	0	1856	0
Grp Volume(v), veh/h	0	1056	506	208	854	0	229	0	344	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1272	1767	1388	0	1310	0	1538	0	1856	0
Q Serve(g_s), s	0.0	23.8	23.9	5.6	11.6	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.8	23.9	5.6	11.6	0.0	9.5	0.0	12.9	0.0	0.0	0.0
Prop In Lane	0.00		0.39	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1089	521	161	1590	0	468	0	411	0	496	0
V/C Ratio(X)	0.00	0.97	0.97	1.29	0.54	0.00	0.49	0.00	0.84	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1089	521	161	1590	0	761	0	755	0	939	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.7	17.7	27.8	8.1	0.0	19.9	0.0	21.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	20.3	31.9	168.1	0.2	0.0	0.3	0.0	1.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.4	10.6	9.8	2.7	0.0	2.7	0.0	4.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	38.0	49.6	195.9	8.3	0.0	20.2	0.0	22.9	0.0	0.0	0.0
LnGrp LOS	A	D	D	F	A	A	C	A	C	A	A	A
Approach Vol, veh/h		1562			1062			573			0	
Approach Delay, s/veh		41.8			45.0			21.9			0.0	
Approach LOS		D			D			C				

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	30.0		21.3		40.0		21.3
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	7.6	25.9		0.0		13.6		14.9
Green Ext Time (p_c), s	0.0	0.0		0.0		4.2		1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	640	190	650	390	100	260	544	819	200	676	200
Future Volume (veh/h)	221	640	190	650	390	100	260	544	819	200	676	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	235	681	202	691	415	106	277	579	871	213	719	213
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
Arrive On Green	0.09	0.28	0.28	0.13	0.32	0.32	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1135	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	235	681	202	691	415	106	277	579	871	213	719	213
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1135	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	18.2	36.8	16.0	23.4	16.1
Cycle Q Clear(g_c), s	11.8	30.4	16.1	17.3	34.9	9.1	14.8	18.2	36.8	16.0	23.4	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	772	510	361	468	364	202	1002	490	172	1035	417
V/C Ratio(X)	1.46	0.88	0.40	1.92	0.89	0.29	1.37	0.58	1.78	1.24	0.69	0.51
Avail Cap(c_a), veh/h	161	782	515	361	474	368	202	1002	490	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	44.7	28.8	56.1	41.8	33.0	57.3	39.7	38.2	56.7	40.6	38.0
Incr Delay (d2), s/veh	237.6	11.6	0.6	422.4	17.5	0.2	195.3	0.8	357.4	147.2	1.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	11.7	4.7	27.0	14.8	2.5	17.6	8.0	64.0	12.5	10.1	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	296.4	56.4	29.4	478.5	59.2	33.2	252.6	40.5	395.6	203.9	42.3	38.5
LnGrp LOS	F	E	C	F	E	C	F	D	F	F	D	D
Approach Vol, veh/h		1118			1212			1727			1145	
Approach Delay, s/veh		102.0			296.0			253.6			71.7	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	17.2	47.4	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	32.4	16.8	25.4	13.8	36.9	18.0	38.8
Green Ext Time (p_c), s	0.0	2.3	0.0	2.9	0.0	1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	190.8
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	73.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	120	70	200	1021	610	290
Future Vol, veh/h	120	70	200	1021	610	290
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	129	75	215	1098	656	312

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1811	835	978	0	-	0
Stage 1	822	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	~ 77	365	698	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	320	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 52	357	691	-	-	-
Mov Cap-2 Maneuver	~ 52	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	317	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	$ 881.2		2.1		0	
HCM LOS	F					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	76	-	-
HCM Lane V/C Ratio	0.311	-	2.688	-	-
HCM Control Delay (s)	12.5	-	$ 881.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	1.3	-	19.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	660	436	370	2462	0	0	2688	470
Future Volume (veh/h)	0	0	0	140	660	436	370	2462	0	0	2688	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				169	795	525	446	2966	0	0	3239	566
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				104	492	338	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				377	1787	1231	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				824	0	665	446	2966	0	0	3239	566
Grp Sat Flow(s),veh/h/ln				1837	0	1558	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	88.2	42.8
Prop In Lane				0.20		0.79	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				505	0	428	150	3362	0	0	2792	836
V/C Ratio(X)				1.63	0.00	1.55	2.97	0.88	0.00	0.00	1.16	0.68
Avail Cap(c_a), veh/h				505	0	428	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.12	0.12	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	35.9	25.7
Incr Delay (d2), s/veh				293.4	0.0	259.2	888.3	0.5	0.0	0.0	76.4	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				61.6	0.0	48.2	42.6	0.1	0.0	0.0	54.7	16.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				351.4	0.0	317.2	954.7	0.5	0.0	0.0	112.3	30.1
LnGrp LOS				F	A	F	F	A	A	A	F	C
Approach Vol, veh/h					1489			3412			3805	
Approach Delay, s/veh					336.2			125.2			100.0	
Approach LOS					F			F			F	

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1						
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9						
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2						
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	90.2						
Green Ext Time (p_c), s		21.0		0.0	0.0	0.0						

Intersection Summary				
HCM 6th Ctrl Delay			150.3	
HCM 6th LOS			F	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	640	360	280	0	0	0	0	2402	40	296	2412	0
Future Volume (veh/h)	640	360	280	0	0	0	0	2402	40	296	2412	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	516	573	289				0	2476	41	305	2487	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	520	546	436				0	2626	43	186	4113	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1482				0	5297	85	1767	6643	0
Grp Volume(v), veh/h	516	573	289				0	1627	890	305	2487	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1482				0	1689	1838	1767	1596	0
Q Serve(g_s), s	46.6	47.1	27.4				0.0	72.6	73.3	16.8	0.0	0.0
Cycle Q Clear(g_c), s	46.6	47.1	27.4				0.0	72.6	73.3	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	520	546	436				0	1729	941	186	4113	0
V/C Ratio(X)	0.99	1.05	0.66				0.00	0.94	0.95	1.64	0.60	0.00
Avail Cap(c_a), veh/h	520	546	436				0	1729	941	186	4113	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.09	0.09	0.09	0.09	0.00
Uniform Delay (d), s/veh	56.3	56.5	49.5				0.0	36.8	37.0	63.2	0.0	0.0
Incr Delay (d2), s/veh	37.2	52.0	3.0				0.0	1.4	2.7	291.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.1	29.9	10.6				0.0	29.5	32.8	21.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.5	108.4	52.5				0.0	38.2	39.7	355.1	0.1	0.0
LnGrp LOS	F	F	D				A	D	D	F	A	A
Approach Vol, veh/h		1378						2517			2792	
Approach Delay, s/veh		91.1						38.7			38.8	
Approach LOS		F						D			D	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	86.8	52.0	108.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	75.3	49.1	2.0
Green Ext Time (p_c), s	0.0	4.3	0.0	12.8

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	476	30	558	0	306	0	941	569	120	670	0
Future Volume (veh/h)	210	476	30	558	0	306	0	941	569	120	670	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.86	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	221	501	32	587	0	322	0	991	599	126	705	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	399	387	25	0	0	0	0	1336	745	193	2514	0
Arrive On Green	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.71	0.00
Sat Flow, veh/h	1767	1714	109		0		0	2148	1146	1767	3618	0
Grp Volume(v), veh/h	221	0	533		0.0		0	838	752	126	705	0
Grp Sat Flow(s),veh/h/ln	1767	0	1823				0	1763	1438	1767	1763	0
Q Serve(g_s), s	17.7	0.0	36.1				0.0	50.8	61.4	3.7	11.5	0.0
Cycle Q Clear(g_c), s	17.7	0.0	36.1				0.0	50.8	61.4	3.7	11.5	0.0
Prop In Lane	1.00		0.06				0.00		0.80	1.00		0.00
Lane Grp Cap(c), veh/h	399	0	411				0	1146	934	193	2514	0
V/C Ratio(X)	0.55	0.00	1.30				0.00	0.73	0.80	0.65	0.28	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1146	934	208	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09				0.00	0.09	0.09	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	62.0				0.0	18.7	20.5	28.6	8.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	134.7				0.0	0.4	0.7	4.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	32.1				0.0	20.4	20.2	3.3	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	196.6				0.0	19.1	21.3	33.3	8.5	0.0
LnGrp LOS	D	A	F				A	B	C	C	A	A
Approach Vol, veh/h		754						1590			831	
Approach Delay, s/veh		155.1						20.1			12.3	
Approach LOS		F						C			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	10.1	108.9	41.0	119.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	15.7	63.4	38.1	13.5
Green Ext Time (p_c), s	0.0	2.2	0.0	19.1

Intersection Summary	
HCM 6th Ctrl Delay	50.1
HCM 6th LOS	D

Year 2050B + P5 PM | Old Town Complex
11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	621	291	497	591	30	321	1872	662	0	1872	770
Future Volume (veh/h)	570	621	291	497	591	30	321	1872	662	0	1872	770
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	432	939	316	405	831	33	349	2035	720	0	2035	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	410	861	345	299	600	24	315	1839	585	0	1836	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	1767	3711	1488	1767	3541	141	3428	3768	1199	0	5233	1572
Grp Volume(v), veh/h	432	939	316	405	435	429	349	1800	955	0	2035	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1826	1714	1689	1590	0	1689	1572
Q Serve(g_s), s	37.1	37.1	33.1	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Cycle Q Clear(g_c), s	37.1	37.1	33.1	27.1	27.1	27.1	14.7	78.1	78.1	0.0	58.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.75	0.00		1.00
Lane Grp Cap(c), veh/h	410	861	345	299	314	309	315	1648	776	0	1836	
V/C Ratio(X)	1.05	1.09	0.92	1.35	1.39	1.39	1.11	1.09	1.23	0.00	1.11	
Avail Cap(c_a), veh/h	410	861	345	299	314	309	315	1648	776	0	1836	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.14	0.14	0.14	0.09	0.09	0.09	0.00	0.76	0.00
Uniform Delay (d), s/veh	61.4	61.5	59.9	75.5	75.5	75.5	65.3	1.9	1.9	0.0	51.0	0.0
Incr Delay (d2), s/veh	59.5	58.6	27.8	162.1	176.3	176.4	53.4	42.5	104.9	0.0	55.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.4	24.5	15.2	26.5	29.0	28.6	8.1	10.5	23.3	0.0	33.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.9	120.0	87.7	237.6	251.8	252.0	118.7	44.4	106.8	0.0	106.4	0.0
LnGrp LOS	F	F	F	F	F	F	F	F	F	A	F	
Approach Vol, veh/h		1687			1269			3104			2035	A
Approach Delay, s/veh		114.2			247.3			71.9			106.4	
Approach LOS		F			F			E			F	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		84.0		43.0	20.1	63.9		33.0				
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9				
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1				
Max Q Clear Time (g_c+I1), s		80.1		39.1	16.7	60.0		29.1				
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			116.9									
HCM 6th LOS			F									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2050B + P5 PM | Old Town Complex
12: Rosecrans St & Midway Dr | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	520	190	200	710	472	260	1878	130	663	1367	180
Future Volume (veh/h)	400	520	190	200	710	472	260	1878	130	663	1367	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	426	553	202	213	755	502	277	1998	138	705	1454	191
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	627	268	264	734	311	317	1990	137	1127	2943	386
Arrive On Green	0.12	0.18	0.18	0.15	0.21	0.21	0.09	0.41	0.41	0.66	1.00	1.00
Sat Flow, veh/h	3428	3526	1507	1767	3526	1493	3428	4831	332	3428	4519	593
Grp Volume(v), veh/h	426	553	202	213	755	502	277	1393	743	705	1086	559
Grp Sat Flow(s),veh/h/ln	1714	1763	1507	1767	1763	1493	1714	1689	1786	1714	1689	1735
Q Serve(g_s), s	19.6	24.5	21.5	18.6	33.3	24.9	12.8	65.9	65.9	19.1	0.0	0.0
Cycle Q Clear(g_c), s	19.6	24.5	21.5	18.6	33.3	24.9	12.8	65.9	65.9	19.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.34
Lane Grp Cap(c), veh/h	420	627	268	264	734	311	317	1391	736	1127	2200	1130
V/C Ratio(X)	1.01	0.88	0.75	0.81	1.03	1.62	0.87	1.00	1.01	0.63	0.49	0.49
Avail Cap(c_a), veh/h	420	729	312	264	734	311	334	1391	736	1127	2200	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.34	0.34	0.34	0.09	0.09	0.09
Uniform Delay (d), s/veh	70.2	64.1	69.5	65.8	63.4	35.5	71.7	47.1	47.1	21.7	0.0	0.0
Incr Delay (d2), s/veh	47.6	10.0	6.8	15.4	40.8	291.3	8.0	14.5	21.8	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	11.9	8.8	9.6	19.1	34.3	6.0	30.0	33.2	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.8	74.2	76.3	81.2	104.2	326.8	79.7	61.5	68.8	21.7	0.1	0.1
LnGrp LOS	F	E	E	F	F	F	E	E	F	C	A	A
Approach Vol, veh/h		1181			1470			2413			2350	
Approach Delay, s/veh		90.3			176.9			65.8			6.6	
Approach LOS		F			F			E			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	58.3	70.8	28.8	33.4	19.2	109.9	24.0	38.2				
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9				
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3				
Max Q Clear Time (g_c+I1), s	21.1	67.9	20.6	26.5	14.8	2.0	21.6	35.3				
Green Ext Time (p_c), s	0.2	0.0	0.0	1.1	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			73.0									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	320	20	567	400	120	30	1647	767	160	1297	410
Future Volume (veh/h)	332	320	20	567	400	120	30	1647	767	160	1297	410
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	346	333	21	591	417	125	31	1716	799	167	1351	427
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	316	405	26	629	439	360	41	2022	612	210	1540	660
Arrive On Green	0.18	0.24	0.24	0.18	0.24	0.24	0.02	0.40	0.40	0.02	0.14	0.14
Sat Flow, veh/h	1767	1723	109	3428	1856	1520	1767	5066	1533	3428	3526	1510
Grp Volume(v), veh/h	346	0	354	591	417	125	31	1716	799	167	1351	427
Grp Sat Flow(s),veh/h/ln	1767	0	1832	1714	1856	1520	1767	1689	1533	1714	1763	1510
Q Serve(g_s), s	28.6	0.0	29.3	27.2	35.4	9.2	2.8	49.3	63.9	7.8	60.1	24.1
Cycle Q Clear(g_c), s	28.6	0.0	29.3	27.2	35.4	9.2	2.8	49.3	63.9	7.8	60.1	24.1
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	0	431	629	439	360	41	2022	612	210	1540	660
V/C Ratio(X)	1.10	0.00	0.82	0.94	0.95	0.35	0.75	0.85	1.31	0.80	0.88	0.65
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2022	612	249	1540	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.58	0.58	0.58	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	65.7	0.0	58.0	64.5	60.1	36.2	77.7	43.7	48.1	77.4	64.3	18.1
Incr Delay (d2), s/veh	78.6	0.0	10.6	13.8	18.9	0.1	9.9	4.7	149.1	7.8	4.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.8	0.0	14.9	13.1	19.0	3.5	1.4	21.3	49.6	3.8	29.7	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.3	0.0	68.7	78.3	79.0	36.3	87.6	48.4	197.1	85.2	69.1	21.2
LnGrp LOS	F	A	E	E	E	D	F	D	F	F	E	C
Approach Vol, veh/h		700			1133			2546			1945	
Approach Delay, s/veh		106.1			73.9			95.5			60.0	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	69.6	33.8	42.5	8.1	75.6	33.5	42.8
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.8	65.9	29.2	31.3	4.8	62.1	30.6	37.4
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	1.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	81.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1088	190	450	977	140	450
Future Volume (veh/h)	1088	190	450	977	140	450
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	1196	209	495	1074	154	495
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	1000	173	432	2173	108	348
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3072	517	1767	3618	373	1199
Grp Volume(v), veh/h	704	701	495	1074	650	0
Grp Sat Flow(s),veh/h/ln	1763	1733	1767	1763	1574	0
Q Serve(g_s), s	37.1	37.1	27.0	18.6	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	18.6	32.1	0.0
Prop In Lane		0.30	1.00		0.24	0.76
Lane Grp Cap(c), veh/h	592	582	432	2173	457	0
V/C Ratio(X)	1.19	1.20	1.15	0.49	1.42	0.00
Avail Cap(c_a), veh/h	592	582	432	2173	457	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.7	39.2	0.0
Incr Delay (d2), s/veh	101.2	107.7	89.8	0.2	202.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.2	32.7	22.4	6.9	37.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	137.9	144.4	131.6	11.9	241.2	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1405			1569	650	
Approach Delay, s/veh	141.2			49.6	241.2	
Approach LOS	F			D	F	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	31.0	42.5	73.5	37.0
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	27.0	* 37	67.6	32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1	20.6	34.1
Green Ext Time (p_c), s	0.0	0.0	10.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	119.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	16.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	330	1693	30	0	1581
Future Vol, veh/h	0	330	1693	30	0	1581
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	340	1745	31	0	1630

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	908	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 276	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	~ 271	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	179.7	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	271	-
HCM Lane V/C Ratio	-	-	1.255	-
HCM Control Delay (s)	-	-	179.7	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	16.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1438	1376	1723	1420	161
Future Volume (veh/h)	0	1438	1376	1723	1420	161
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1482	1419	1776	1464	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1492	1492	1268	1371	
Arrive On Green	0.00	0.42	0.42	0.42	0.40	0.00
Sat Flow, veh/h	0	3711	3618	1509	3428	1572
Grp Volume(v), veh/h	0	1482	1419	1776	1464	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1509	1714	1572
Q Serve(g_s), s	0.0	25.1	23.3	25.4	24.0	0.0
Cycle Q Clear(g_c), s	0.0	25.1	23.3	25.4	24.0	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1492	1492	1268	1371	
V/C Ratio(X)	0.00	0.99	0.95	1.40	1.07	
Avail Cap(c_a), veh/h	0	1492	1492	1268	1371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	17.2	16.7	3.2	18.0	0.0
Incr Delay (d2), s/veh	0.0	21.6	13.4	185.2	44.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.1	10.8	82.7	16.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	38.8	30.1	188.3	62.6	0.0
LnGrp LOS	A	D	C	F	F	
Approach Vol, veh/h		1482	3195		1464	A
Approach Delay, s/veh		38.8	118.1		62.6	
Approach LOS		D	F		E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.8		29.2		30.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		27.1		26.0		27.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		85.7
HCM 6th LOS		F

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	0	0	0	95	1373	0	0	1396	110
Future Volume (veh/h)	80	0	100	0	0	0	95	1373	0	0	1396	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	1.00		1.00	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	91	0	114	0	0	0	108	1560	0	0	1586	125
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	216	30	183	138	408	0	138	2949	0	3	2002	158
Arrive On Green	0.22	0.00	0.22	0.00	0.00	0.00	0.08	0.58	0.00	0.00	0.42	0.42
Sat Flow, veh/h	527	136	830	1268	1856	0	1767	5233	0	1767	4771	376
Grp Volume(v), veh/h	205	0	0	0	0	0	108	1560	0	0	1122	589
Grp Sat Flow(s),veh/h/ln	1492	0	0	1268	1856	0	1767	1689	0	1767	1689	1769
Q Serve(g_s), s	4.2	0.0	0.0	0.0	0.0	0.0	3.1	9.7	0.0	0.0	15.0	15.1
Cycle Q Clear(g_c), s	6.3	0.0	0.0	0.0	0.0	0.0	3.1	9.7	0.0	0.0	15.0	15.1
Prop In Lane	0.44		0.56	1.00		0.00	1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	428	0	0	138	408	0	138	2949	0	3	1417	743
V/C Ratio(X)	0.48	0.00	0.00	0.00	0.00	0.00	0.79	0.53	0.00	0.00	0.79	0.79
Avail Cap(c_a), veh/h	1006	0	0	642	1145	0	183	2949	0	228	1480	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	0.0	0.0	0.0	0.0	23.6	6.6	0.0	0.0	13.1	13.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	0.0	0.0	10.5	0.2	0.0	0.0	3.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.0	0.0	0.0	1.6	2.4	0.0	0.0	5.2	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	0.0	0.0	0.0	0.0	34.1	6.8	0.0	0.0	16.1	18.7
LnGrp LOS	B	A	A	A	A	A	C	A	A	A	B	B
Approach Vol, veh/h		205			0			1668			1711	
Approach Delay, s/veh		18.5			0.0			8.6			17.0	
Approach LOS		B						A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	35.7		16.3	8.5	27.2		16.3
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	0.0	11.7		8.3	5.1	17.1		0.0
Green Ext Time (p_c), s	0.0	7.8		0.8	0.0	4.8		0.0

Intersection Summary		
HCM 6th Ctrl Delay		13.2
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	442.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	914	633	1163	1506	30
Future Vol, veh/h	0	914	633	1163	1506	30
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	962	666	1224	1585	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	829	1627	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 268	~ 191	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 263	~ 189	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1233.4	$ 418.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 189	-	263	-	-
HCM Lane V/C Ratio	3.525	-	3.658	-	-
HCM Control Delay (s)	$ 1186.5		$ 1233.4	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	63.6	-	91.3	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	216.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↑↱	
Traffic Vol, veh/h	0	622	0	2761	2537	273
Future Vol, veh/h	0	622	0	2761	2537	273
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	641	0	2846	2615	281

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1469	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 116	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 114	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 2155.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	114	-	-
HCM Lane V/C Ratio	-	5.625	-	-
HCM Control Delay (s)		$ 2155.5	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	69.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↱	
Traffic Volume (veh/h)	226	20	120	150	60	110	280	2405	20	40	2952	167
Future Volume (veh/h)	226	20	120	150	60	110	280	2405	20	40	2952	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	251	22	133	167	67	122	311	2672	22	44	3280	186
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1575	675	56	1252	70
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.45	0.45	0.03	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1511	1767	3385	190
Grp Volume(v), veh/h	251	22	133	167	67	122	311	2672	22	44	1689	1777
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1511	1767	1763	1811
Q Serve(g_s), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	62.5	1.1	3.5	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	9.8	13.0	3.8	10.7	16.2	62.5	1.1	3.5	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1575	675	56	652	670
V/C Ratio(X)	1.88	0.05	0.34	0.87	0.13	0.34	1.52	1.70	0.03	0.78	2.59	2.65
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1575	675	72	652	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	43.5	61.5	37.8	40.3	61.9	38.7	21.7	67.3	44.1	44.1
Incr Delay (d2), s/veh	421.0	0.0	0.2	14.2	0.0	0.2	257.7	316.3	0.0	25.5	719.4	747.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	0.6	3.9	6.6	1.8	3.4	21.9	95.7	0.4	2.0	152.7	162.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	485.7	40.3	43.6	75.7	37.8	40.5	319.6	355.1	21.8	92.8	763.5	791.7
LnGrp LOS	F	D	D	E	D	D	F	F	C	F	F	F
Approach Vol, veh/h		406			356			3005			3510	
Approach Delay, s/veh		316.8			56.5			348.9			769.4	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	71.2	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	5.5	64.5	15.0	11.8	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	535.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	9187.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2800	2662	2705	3032	190
Future Vol, veh/h	0	2800	2662	2705	3032	190
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	3111	2958	3006	3369	211

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1705	3590	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 80	~ 64	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 78	~ 63	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 17597.1	$ 10315.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 63	-	78	-	-
HCM Lane V/C Ratio	46.949	-	39.886	-	-
HCM Control Delay (s)	$ 20797.4	-	$ 17597.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	364.9	-	382.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	150	310	230	350	10	510	60	270	10	130	50
Future Volume (veh/h)	10	150	310	230	350	10	510	60	270	10	130	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.99		0.95	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	158	326	242	368	11	537	63	284	11	137	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	180	372	176	629	19	496	47	211	79	614	226
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	988	513	1058	896	1789	53	824	97	436	33	1267	466
Grp Volume(v), veh/h	11	0	484	242	0	379	884	0	0	201	0	0
Grp Sat Flow(s),veh/h/ln	988	0	1570	896	0	1843	1356	0	0	1766	0	0
Q Serve(g_s), s	0.6	0.0	17.3	3.8	0.0	10.1	25.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	17.3	21.1	0.0	10.1	29.1	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.03	0.61		0.32	0.05		0.26
Lane Grp Cap(c), veh/h	302	0	552	176	0	648	754	0	0	920	0	0
V/C Ratio(X)	0.04	0.00	0.88	1.37	0.00	0.58	1.17	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	302	0	552	176	0	648	754	0	0	920	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	18.2	29.4	0.0	15.9	16.8	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	15.2	199.3	0.0	1.4	91.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.9	12.2	0.0	4.0	28.7	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	33.5	228.7	0.0	17.3	108.0	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	C	A	C	F	A	B	F	A	A	A	A	A
Approach Vol, veh/h		495			621			884			201	
Approach Delay, s/veh		33.2			99.7			108.0			9.0	
Approach LOS		C			F			F			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		34.0		26.0		34.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		21.1		29.1		21.1		29.1				
Max Q Clear Time (g_c+I1), s		19.3		6.0		23.1		31.1				
Green Ext Time (p_c), s		0.8		0.8		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			79.8
HCM 6th LOS			E

Year 2050B + P5 PM | Old Town Complex

23: Old Town Ave & Moore St

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	10	30	80	190	310	1130	550	50	0	540	280
Future Volume (veh/h)	5	10	30	80	190	310	1130	550	50	0	540	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	5	11	33	87	207	337	1228	598	54	0	587	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	113	268	95	134	203	459	1063	96	0	367	190
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	70	468	1111	180	556	843	1767	1671	151	0	1141	591
Grp Volume(v), veh/h	49	0	0	631	0	0	1228	0	652	0	0	891
Grp Sat Flow(s),veh/h/ln	1649	0	0	1579	0	0	1767	0	1822	0	0	1732
Q Serve(g_s), s	0.0	0.0	0.0	16.1	0.0	0.0	20.8	0.0	16.2	0.0	0.0	25.7
Cycle Q Clear(g_c), s	1.9	0.0	0.0	19.3	0.0	0.0	20.8	0.0	16.2	0.0	0.0	25.7
Prop In Lane	0.10		0.67	0.14		0.53	1.00		0.08	0.00		0.34
Lane Grp Cap(c), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
V/C Ratio(X)	0.11	0.00	0.00	1.46	0.00	0.00	2.67	0.00	0.56	0.00	0.00	1.60
Avail Cap(c_a), veh/h	447	0	0	432	0	0	459	0	1159	0	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	31.4	0.0	0.0	29.6	0.0	8.2	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	219.7	0.0	0.0	758.9	0.0	0.4	0.0	0.0	278.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	34.7	0.0	0.0	105.3	0.0	5.4	0.0	0.0	53.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	251.2	0.0	0.0	788.5	0.0	8.6	0.0	0.0	306.1
LnGrp LOS	C	A	A	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		49			631			1880			891	
Approach Delay, s/veh		23.8			251.2			518.0			306.1	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2				
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3				
Max Q Clear Time (g_c+I1), s		18.2		3.9	22.8	27.7		21.3				
Green Ext Time (p_c), s		3.2		0.1	0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	407.5
HCM 6th LOS	F

Year 2050B + P5 PM | Old Town Complex

24: Hancock St/Old Town Ave & I-5 SB Off-Ramp

08/13/2020

Intersection	
Intersection Delay, s/veh	436.3
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	530	1057	0	1105	290	0
Future Vol, veh/h	530	1057	0	1105	290	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	589	1174	0	1228	322	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	409.4	583.2	23.5
HCM LOS	F	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1105	530	1057	290
LT Vol	0	530	0	0
Through Vol	1105	0	0	290
RT Vol	0	0	1057	0
Lane Flow Rate	1228	589	1174	322
Geometry Grp	2	7	7	2
Degree of Util (X)	2.252	1.26	2.122	0.631
Departure Headway (Hd)	6.06	9.762	8.508	7.932
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	614	377	446	458
Service Time	4.06	7.462	6.208	5.932
HCM Lane V/C Ratio	2	1.562	2.632	0.703
HCM Control Delay	583.2	165.6	531.7	23.5
HCM Lane LOS	F	F	F	C
HCM 95th-tile Q	98.1	20.5	64.6	4.3

Intersection	
Intersection Delay, s/veh	470.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	400	1070	90	110	20	1045	5	240	10	5	5
Future Vol, veh/h	10	400	1070	90	110	20	1045	5	240	10	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	421	1126	95	116	21	1100	5	253	11	5	5
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	360.3	23.8	679.2	15.4
HCM LOS	F	C	F	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	81%	2%	0%	41%	50%
Vol Thru, %	0%	98%	0%	50%	25%
Vol Right, %	19%	0%	100%	9%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1290	410	1070	220	20
LT Vol	1045	10	0	90	10
Through Vol	5	400	0	110	5
RT Vol	240	0	1070	20	5
Lane Flow Rate	1358	432	1126	232	21
Geometry Grp	2	7	7	5	2
Degree of Util (X)	2.462	0.849	1.994	0.465	0.048
Departure Headway (Hd)	6.885	10.553	9.802	11.345	11.778
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	543	350	383	322	306
Service Time	4.885	8.253	7.502	9.345	9.778
HCM Lane V/C Ratio	2.501	1.234	2.94	0.72	0.069
HCM Control Delay	679.2	51.3	478.7	23.8	15.4
HCM Lane LOS	F	F	F	C	C
HCM 95th-tile Q	100.4	7.7	51	2.3	0.2

Intersection	
Intersection Delay, s/veh	592.1
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	70	200	1230	145	1020
Future Vol, veh/h	60	70	200	1230	145	1020
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	85	244	1500	177	1244
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	14.5	763.1	446.6
HCM LOS	B	F	F

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	14%	100%	0%	0%
Vol Thru, %	86%	0%	0%	12%
Vol Right, %	0%	0%	100%	88%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1430	60	70	1165
LT Vol	200	60	0	0
Through Vol	1230	0	0	145
RT Vol	0	0	70	1020
Lane Flow Rate	1744	73	85	1421
Geometry Grp	2	7	7	2
Degree of Util (X)	2.652	0.166	0.165	1.942
Departure Headway (Hd)	6.457	10.582	9.298	6.573
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	341	388	568
Service Time	4.457	8.282	6.998	4.573
HCM Lane V/C Ratio	3.033	0.214	0.219	2.502
HCM Control Delay	763.1	15.4	13.8	446.6
HCM Lane LOS	F	C	B	F
HCM 95th-tile Q	119.8	0.6	0.6	70.2

Intersection	
Intersection Delay, s/veh	305.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	63	1010	0	420	250	55	160	0
Future Vol, veh/h	0	0	0	10	63	1010	0	420	250	55	160	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	75	1202	0	500	298	65	190	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	516.8	53.4	23
HCM LOS	-	F	F	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	1%	26%
Vol Thru, %	100%	0%	100%	6%	74%
Vol Right, %	0%	100%	0%	93%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	250	0	1083	215
LT Vol	0	0	0	10	55
Through Vol	420	0	0	63	160
RT Vol	0	250	0	1010	0
Lane Flow Rate	500	298	0	1289	256
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.975	0.522	0	2.104	0.509
Departure Headway (Hd)	9.782	9.046	10.706	5.875	10.036
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	375	402	0	619	363
Service Time	7.482	6.746	8.706	3.951	8.036
HCM Lane V/C Ratio	1.333	0.741	0	2.082	0.705
HCM Control Delay	72.6	21.2	13.7	516.8	23
HCM Lane LOS	F	C	N	F	C
HCM 95th-tile Q	11	2.9	0	88.9	2.8

Intersection	
Intersection Delay, s/veh	138.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	180	240	150	0	0	0	150	120	250	330	140	140
Future Vol, veh/h	180	240	150	0	0	0	150	120	250	330	140	140
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	198	264	165	0	0	0	165	132	275	363	154	154
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	137.5	93.9	176.5
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	32%	54%
Vol Thru, %	23%	42%	23%
Vol Right, %	48%	26%	23%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	520	570	610
LT Vol	150	180	330
Through Vol	120	240	140
RT Vol	250	150	140
Lane Flow Rate	571	626	670
Geometry Grp	1	1	1
Degree of Util (X)	1.082	1.21	1.307
Departure Headway (Hd)	7.862	7.554	7.769
Convergence, Y/N	Yes	Yes	Yes
Cap	469	489	476
Service Time	5.862	5.554	5.769
HCM Lane V/C Ratio	1.217	1.28	1.408
HCM Control Delay	93.9	137.5	176.5
HCM Lane LOS	F	F	F
HCM 95th-tile Q	16.2	22.2	26.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	210	280	50	460	2131	0	0	761	680
Future Volume (veh/h)	0	0	0	210	280	50	460	2131	0	0	761	680
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				221	295	53	484	2243	0	0	801	716
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				344	565	100	502	2438	0	0	1741	756
Arrive On Green				0.19	0.19	0.19	0.29	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1767	2902	514	3428	3618	0	0	3618	1531
Grp Volume(v), veh/h				221	170	178	484	2243	0	0	801	716
Grp Sat Flow(s),veh/h/ln				1767	1689	1727	1714	1763	0	0	1763	1531
Q Serve(g_s), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	12.8	38.3
Cycle Q Clear(g_c), s				9.9	7.7	8.0	12.0	0.0	0.0	0.0	12.8	38.3
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				344	329	336	502	2438	0	0	1741	756
V/C Ratio(X)				0.64	0.52	0.53	0.96	0.92	0.00	0.00	0.46	0.95
Avail Cap(c_a), veh/h				536	512	524	502	2438	0	0	1741	756
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	31.0	31.1	30.2	0.0	0.0	0.0	14.3	20.7
Incr Delay (d2), s/veh				0.8	0.5	0.5	5.9	0.7	0.0	0.0	0.9	22.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	3.1	3.3	4.4	0.3	0.0	0.0	5.0	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	31.5	31.6	36.1	0.7	0.0	0.0	15.1	42.8
LnGrp LOS				C	C	C	D	A	A	A	B	D
Approach Vol, veh/h					569			2727			1517	
Approach Delay, s/veh					32.0			7.0			28.2	
Approach LOS					C			A			C	

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	64.4	17.0	47.4	21.6
Change Period (Y+Rc), s	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	50.1	12.6	33.1	26.1
Max Q Clear Time (g_c+I1), s	2.0	14.0	40.3	11.9
Green Ext Time (p_c), s	38.0	0.0	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1340	490	280	0	0	0	0	1251	170	300	671	0
Future Volume (veh/h)	1340	490	280	0	0	0	0	1251	170	300	671	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1381	505	289				0	1290	175	309	692	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1360	714	457				0	988	422	343	1414	0
Arrive On Green	0.38	0.38	0.38				0.00	0.35	0.35	0.10	0.50	0.00
Sat Flow, veh/h	3534	1856	1188				0	2897	1204	3428	2897	0
Grp Volume(v), veh/h	1381	505	289				0	1290	175	309	692	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1188				0	1411	1204	1714	1411	0
Q Serve(g_s), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	13.9	0.0
Cycle Q Clear(g_c), s	33.1	19.8	17.0				0.0	30.1	9.5	7.7	13.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1360	714	457				0	988	422	343	1414	0
V/C Ratio(X)	1.02	0.71	0.63				0.00	1.31	0.42	0.90	0.49	0.00
Avail Cap(c_a), veh/h	1360	714	457				0	988	422	343	1414	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.58	0.58	0.85	0.85	0.00
Uniform Delay (d), s/veh	26.5	22.4	21.5				0.0	27.9	21.3	38.3	14.2	0.0
Incr Delay (d2), s/veh	28.2	2.7	2.2				0.0	142.0	1.7	22.2	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	8.7	4.8				0.0	29.1	2.8	4.2	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	25.1	23.7				0.0	170.0	23.0	60.5	15.2	0.0
LnGrp LOS	F	C	C				A	F	C	E	B	A
Approach Vol, veh/h		2175						1465			1001	
Approach Delay, s/veh		43.7						152.4			29.2	
Approach LOS		D						F			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	13.0	35.0	38.0	48.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	8.6	30.1	33.1	43.1
Max Q Clear Time (g_c+I1), s	19.7	32.1	35.1	15.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	74.9
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

31: Washington St & Pacific Hwy (N)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	150	80	70	200	230	1101	0	0	620	331
Future Volume (veh/h)	120	0	150	80	70	200	230	1101	0	0	620	331
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	126	0	158	84	74	211	242	1159	0	0	653	348
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	39	0	48	371	390	312	200	1523	0	0	1036	444
Arrive On Green	0.05	0.00	0.05	0.21	0.21	0.21	0.11	0.54	0.00	0.00	0.37	0.37
Sat Flow, veh/h	727	0	911	1767	1856	1484	1767	2897	0	0	2897	1211
Grp Volume(v), veh/h	284	0	0	84	74	211	242	1159	0	0	653	348
Grp Sat Flow(s),veh/h/ln	1638	0	0	1767	1856	1484	1767	1411	0	0	1411	1211
Q Serve(g_s), s	4.0	0.0	0.0	3.0	2.5	9.8	8.5	24.1	0.0	0.0	14.3	19.2
Cycle Q Clear(g_c), s	4.0	0.0	0.0	3.0	2.5	9.8	8.5	24.1	0.0	0.0	14.3	19.2
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	87	0	0	371	390	312	200	1523	0	0	1036	444
V/C Ratio(X)	3.26	0.00	0.00	0.23	0.19	0.68	1.21	0.76	0.00	0.00	0.63	0.78
Avail Cap(c_a), veh/h	87	0	0	611	642	513	200	1711	0	0	1208	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	24.6	24.4	27.3	33.4	13.5	0.0	0.0	19.6	21.1
Incr Delay (d2), s/veh	1046.2	0.0	0.0	0.1	0.1	1.0	132.3	1.5	0.0	0.0	0.9	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.9	0.0	0.0	1.2	1.1	3.4	10.9	7.0	0.0	0.0	4.5	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1081.8	0.0	0.0	24.7	24.5	28.3	165.7	15.0	0.0	0.0	20.6	28.2
LnGrp LOS	F	A	A	C	C	C	F	B	A	A	C	C
Approach Vol, veh/h		284			369			1401			1001	
Approach Delay, s/veh		1081.8			26.7			41.0			23.2	
Approach LOS		F			C			D			C	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		45.0		8.0	13.0	32.0		22.2				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0				
Max Q Clear Time (g_c+I1), s		26.1		6.0	10.5	21.2		11.8				
Green Ext Time (p_c), s		6.0		0.0	0.0	5.1		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		130.2
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

32: Washington St & Pacific Hwy (S)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	841	160	100	0	0	0	0	490	90	340	180	0
Future Volume (veh/h)	841	160	100	0	0	0	0	490	90	340	180	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	995	0	104				0	510	94	354	188	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1216	0	866				0	635	116	330	631	0
Arrive On Green	0.34	0.00	0.34				0.00	0.22	0.22	0.19	0.19	0.00
Sat Flow, veh/h	3534	0	1530				0	3033	538	1767	3544	0
Grp Volume(v), veh/h	995	0	104				0	304	300	354	188	0
Grp Sat Flow(s),veh/h/ln	1767	0	1530				0	1763	1715	1767	1689	0
Q Serve(g_s), s	14.7	0.0	1.8				0.0	9.4	9.5	10.7	2.7	0.0
Cycle Q Clear(g_c), s	14.7	0.0	1.8				0.0	9.4	9.5	10.7	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	1216	0	866				0	381	370	330	631	0
V/C Ratio(X)	0.82	0.00	0.12				0.00	0.80	0.81	1.07	0.30	0.00
Avail Cap(c_a), veh/h	1900	0	1162				0	431	419	330	631	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	0.0	5.9				0.0	21.3	21.3	23.3	20.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0				0.0	8.0	8.9	70.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.8				0.0	4.4	4.4	10.5	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	0.0	6.0				0.0	29.3	30.2	93.4	20.4	0.0
LnGrp LOS	B	A	A				A	C	C	F	C	A
Approach Vol, veh/h		1099						604			542	
Approach Delay, s/veh		16.8						29.7			68.1	
Approach LOS		B						C			E	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				16.4		25.9		15.0				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		30.8		10.7				
Max Q Clear Time (g_c+I1), s				11.5		16.7		12.7				
Green Ext Time (p_c), s				0.7		2.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			32.7
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Year 2050B + P5 PM | Old Town Complex
33: Pacific Hwy & Sassafras St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	290	140	430	420	140	270	725	70	260	1394	80
Future Volume (veh/h)	100	290	140	430	420	140	270	725	70	260	1394	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	102	296	143	439	429	143	276	740	71	265	1422	82
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	103	426	423	279	449	150	108	1101	105	176	1441	83
Arrive On Green	0.06	0.28	0.28	0.19	0.41	0.41	0.06	0.24	0.24	0.12	0.29	0.29
Sat Flow, veh/h	1767	1537	1525	1464	1095	365	1767	4676	445	1464	4890	282
Grp Volume(v), veh/h	102	296	143	439	0	572	276	533	278	265	982	522
Grp Sat Flow(s),veh/h/ln	1767	1537	1525	1464	0	1460	1767	1689	1744	1464	1689	1795
Q Serve(g_s), s	6.2	18.6	8.1	20.6	0.0	41.0	6.6	15.5	15.7	13.0	31.2	31.2
Cycle Q Clear(g_c), s	6.2	18.6	8.1	20.6	0.0	41.0	6.6	15.5	15.7	13.0	31.2	31.2
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.26	1.00		0.16
Lane Grp Cap(c), veh/h	103	426	423	279	0	598	108	795	410	176	995	529
V/C Ratio(X)	0.99	0.69	0.34	1.57	0.00	0.96	2.55	0.67	0.68	1.50	0.99	0.99
Avail Cap(c_a), veh/h	103	456	452	279	0	626	108	795	410	176	995	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	34.9	31.1	43.7	0.0	30.9	50.7	37.5	37.5	47.5	37.9	37.9
Incr Delay (d2), s/veh	84.7	3.3	0.2	273.6	0.0	25.0	725.7	2.7	5.5	253.5	25.3	35.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.3	3.0	28.6	0.0	18.1	24.7	6.6	7.3	17.1	16.1	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.5	38.2	31.3	317.3	0.0	55.9	776.3	40.2	43.0	300.9	63.2	73.6
LnGrp LOS	F	D	C	F	A	E	F	D	D	F	E	E
Approach Vol, veh/h		541			1011			1087			1769	
Approach Delay, s/veh		54.7			169.4			227.8			101.9	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	30.7	25.0	34.8	11.0	37.1	10.7	49.1
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	15.0	17.7	22.6	20.6	8.6	33.2	8.2	43.0
Green Ext Time (p_c), s	0.0	4.4	0.0	1.1	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	142.6
HCM 6th LOS	F

Year 2050B + P5 PM | Old Town Complex
34: Pacific Hwy & Laurel St | 08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	554	1810	180	130	1040	139	170	611	170	229	1191	954
Future Volume (veh/h)	554	1810	180	130	1040	139	170	611	170	229	1191	954
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	637	2080	207	149	1195	160	195	702	195	263	1369	1097
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1318	129	159	798	106	155	1630	446	286	2475	1140
Arrive On Green	0.25	0.41	0.41	0.09	0.26	0.26	0.09	0.41	0.41	0.16	0.49	0.49
Sat Flow, veh/h	1767	3236	316	1767	3112	415	1767	3932	1075	1767	5066	1537
Grp Volume(v), veh/h	637	1114	1173	149	675	680	195	601	296	263	1369	1097
Grp Sat Flow(s),veh/h/ln	1767	1763	1789	1767	1763	1765	1767	1689	1630	1767	1689	1537
Q Serve(g_s), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	17.8	18.2	20.5	26.5	68.4
Cycle Q Clear(g_c), s	34.6	57.0	57.0	11.7	35.9	35.9	12.3	17.8	18.2	20.5	26.5	68.4
Prop In Lane	1.00		0.18	1.00		0.24	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	728	159	452	453	155	1400	676	286	2475	1140
V/C Ratio(X)	1.46	1.55	1.61	0.94	1.49	1.50	1.26	0.43	0.44	0.92	0.55	0.96
Avail Cap(c_a), veh/h	437	718	728	159	452	453	155	1400	676	323	2475	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	41.5	41.5	63.3	52.0	52.1	63.9	29.2	29.3	57.8	25.1	17.0
Incr Delay (d2), s/veh	218.7	255.5	280.8	52.3	233.0	238.0	156.9	1.0	2.1	27.1	0.9	19.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	41.8	75.3	81.6	7.6	45.1	45.8	12.3	7.5	7.6	11.3	10.8	34.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	271.4	297.0	322.3	115.6	285.1	290.0	220.8	30.1	31.3	84.9	26.0	36.1
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	D
Approach Vol, veh/h		2924			1504			1092			2729	
Approach Delay, s/veh		301.6			270.5			64.5			35.7	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	64.3	17.9	62.3	16.7	74.6	39.0	41.2
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	22.5	20.2	13.7	59.0	14.3	70.4	36.6	37.9
Green Ext Time (p_c), s	0.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	176.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1923	3050	2080	230	140	60
Future Volume (veh/h)	1923	3050	2080	230	140	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2068	3280	2237	0	151	65
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4102	2160		182	162
Arrive On Green	0.35	0.81	0.43	0.00	0.10	0.10
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	2068	3280	2237	0	151	65
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	41.9	51.2	0.0	10.1	4.6
Cycle Q Clear(g_c), s	41.6	41.9	51.2	0.0	10.1	4.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4102	2160		182	162
V/C Ratio(X)	1.74	0.80	1.04		0.83	0.40
Avail Cap(c_a), veh/h	1188	4102	2160		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	6.2	34.4	0.0	52.8	50.4
Incr Delay (d2), s/veh	336.5	1.7	29.3	0.0	3.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	72.7	11.4	26.2	0.0	4.6	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	375.7	7.9	63.7	0.0	56.5	51.0
LnGrp LOS	F	A	F		E	D
Approach Vol, veh/h		5348	2237	A	216	
Approach Delay, s/veh		150.1	63.7		54.9	
Approach LOS		F	E		D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	102.5	17.5	46.0	56.5
Change Period (Y+Rc), s	5.3	5.2	4.4	* 5.3
Max Green Setting (Gmax), s	79.5	30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s	43.9	12.1	43.6	53.2
Green Ext Time (p_c), s	35.5	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	122.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	220	290	361	120	342	220	1210	344	384	1260	230
Future Volume (veh/h)	190	220	290	361	120	342	220	1210	344	384	1260	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	198	229	302	376	125	356	229	1260	358	400	1312	240
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	256	416	338	178	464	379	268	987	273	248	1505	779
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.08	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3428	1856	1508	1767	1856	1517	3428	2707	750	1767	3526	1549
Grp Volume(v), veh/h	198	229	302	376	125	356	229	809	809	400	1312	240
Grp Sat Flow(s),veh/h/ln	1714	1856	1508	1767	1856	1517	1714	1763	1695	1767	1763	1549
Q Serve(g_s), s	6.5	12.6	22.4	11.6	6.2	26.5	7.6	42.0	42.0	16.2	39.1	10.5
Cycle Q Clear(g_c), s	6.5	12.6	22.4	11.6	6.2	26.5	7.6	42.0	42.0	16.2	39.1	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	256	416	338	178	464	379	268	643	618	248	1505	779
V/C Ratio(X)	0.77	0.55	0.89	2.11	0.27	0.94	0.86	1.26	1.31	1.61	0.87	0.31
Avail Cap(c_a), veh/h	339	499	406	178	496	406	268	643	618	248	1508	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	39.6	43.4	51.8	34.7	42.3	52.5	36.6	36.6	49.5	30.1	16.9
Incr Delay (d2), s/veh	5.3	1.1	19.1	519.6	0.1	27.9	21.8	129.0	150.5	292.4	6.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.9	9.8	30.7	2.8	12.4	4.0	40.2	42.4	27.2	16.9	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	40.7	62.5	571.4	34.9	70.3	74.3	165.6	187.2	341.9	36.2	17.3
LnGrp LOS	E	D	E	F	C	E	E	F	F	F	D	B
Approach Vol, veh/h		729			857			1847			1952	
Approach Delay, s/veh		54.3			285.0			163.7			96.5	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	47.3	16.0	31.3	13.4	54.5	13.0	34.3
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8
Max Q Clear Time (g_c+I1), s	18.2	44.0	13.6	24.4	9.6	41.1	8.5	28.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	6.6	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	143.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1384	320	290	600	0	0	0	0	190	0	1224
Future Volume (veh/h)	0	1384	320	290	600	0	0	0	0	190	0	1224
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1457	337	305	632	0				200	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1627	726	897	2725	0				231	0	
Arrive On Green	0.00	0.46	0.46	0.52	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1457	337	305	632	0				200	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	37.9	14.7	5.2	0.0	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	37.9	14.7	5.2	0.0	0.0				11.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1627	726	897	2725	0				231	0	
V/C Ratio(X)	0.00	0.90	0.46	0.34	0.23	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	1833	818	897	2725	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.27	0.27	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.7	18.5	18.8	0.0	0.0				42.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2	0.1	0.1	0.0				7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.6	5.0	1.8	0.0	0.0				5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.6	18.6	18.9	0.1	0.0				50.5	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1794			937						200	A
Approach Delay, s/veh		24.3			6.2						50.5	
Approach LOS		C			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	11.2	51.1		17.7		82.3						
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0						
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0						
Max Q Clear Time (g_c+I1), s	7.2	39.9		13.1		2.0						
Green Ext Time (p_c), s	0.6	6.2		0.1		3.0						
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	993	580	0	0	570	380	320	10	640	0	0	0
Future Volume (veh/h)	993	580	0	0	570	380	320	10	640	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	1003	586	0	0	576	384	323	10	646			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1128	2324	0	0	556	371	488	15	447			
Arrive On Green	0.55	1.00	0.00	0.00	0.28	0.28	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2080	1325	1717	53	1572			
Grp Volume(v), veh/h	1003	586	0	0	511	449	333	0	646			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1550	1770	0	1572			
Q Serve(g_s), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Cycle Q Clear(g_c), s	25.8	0.0	0.0	0.0	28.0	28.0	16.6	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.86	0.97		1.00			
Lane Grp Cap(c), veh/h	1128	2324	0	0	494	434	503	0	447			
V/C Ratio(X)	0.89	0.25	0.00	0.00	1.04	1.04	0.66	0.00	1.45			
Avail Cap(c_a), veh/h	1128	2324	0	0	494	434	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.50	0.50	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.9	0.0	0.0	0.0	36.0	36.0	31.6	0.0	35.8			
Incr Delay (d2), s/veh	4.8	0.1	0.0	0.0	49.9	52.6	2.6	0.0	213.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	0.0	18.4	16.5	7.3	0.0	47.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	0.1	0.0	0.0	85.9	88.6	34.2	0.0	249.0			
LnGrp LOS	C	A	A	A	F	F	C	A	F			
Approach Vol, veh/h		1589			960			979				
Approach Delay, s/veh		16.3			87.1			176.0				
Approach LOS		B			F			F				
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		71.4		33.0	38.4	33.0						
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5						
Max Green Setting (Gmax), s		61.5		28.4	29.3	* 28						
Max Q Clear Time (g_c+I1), s		2.0		30.4	27.8	30.0						
Green Ext Time (p_c), s		2.7		0.0	0.7	0.0						
Intersection Summary												
HCM 6th Ctrl Delay			79.9									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1111	10	380	861	0	1280
Future Volume (veh/h)	1111	10	380	861	0	1280
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1179	0	400	0	0	1347
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1263	575	1530		0	1530
Arrive On Green	0.36	0.00	0.43	0.00	0.00	0.43
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1179	0	400	0	0	1347
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	21.9	0.0	4.9	0.0	0.0	23.8
Cycle Q Clear(g_c), s	21.9	0.0	4.9	0.0	0.0	23.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1263	575	1530		0	1530
V/C Ratio(X)	0.93	0.00	0.26		0.00	0.88
Avail Cap(c_a), veh/h	1273	580	1530		0	1530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	12.3	0.0	0.0	17.6
Incr Delay (d2), s/veh	12.6	0.0	0.4	0.0	0.0	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	0.0	1.8	0.0	0.0	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.7	0.0	12.7	0.0	0.0	25.2
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1179		400	A		1347
Approach Delay, s/veh	33.7		12.7			25.2
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.0	35.0	33.0
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.9	25.8	23.9
Green Ext Time (p_c), s	3.5	3.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	26.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX U

YEAR 2050 WITH ALTERNATIVE 5 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7215	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1323
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7106	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1303
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, In	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8551	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1568
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10057	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1844
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8501	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1882
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8909	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1972
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

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HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9338	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2067
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9681	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2143
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.7
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1669
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1778
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8570	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1897
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8560	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5940	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1644
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1752
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6750	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1868
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1710
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.5
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6590	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1824
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7030	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1946
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1943
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8816	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1952
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9783	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2166
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10277	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2275
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10131	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2243
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9726	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2153
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10743	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2379
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11307	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2503
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	11151	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2469
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.17
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8136	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2252
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9063	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2508
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.13
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9507	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2631
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9351	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2588
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.17
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10947	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2424
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12023	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2662
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.20
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12684	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2808
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.27
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	12541	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2777
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.25
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8999	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1992
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9912	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2195
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	49.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10442	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2312
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.04
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	10320	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2285
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3882	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1061
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3101	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	848
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4958	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1355
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/ Midway Dr to I-5	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4761	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1301
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4424	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1209
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5885	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1608
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.72
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5970	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2176
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.8
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4796	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1748
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7144	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1562
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9615	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2103
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	48.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9820	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2147
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7726	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1689
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6912	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1889
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9197	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2514
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.13
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9345	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2043
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.3
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7489	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1638
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7352	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2008
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9807	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2678
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.20
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9975	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2179
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.7
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 5: With Transit Center (Lower)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7969	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1741
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX V

NEAR-TERM YEAR 2030 INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	160	180	80	130	120	650
Future Volume (vph)	160	180	80	130	120	650
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	196	87	141	130	707

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	174	196	228	130	707
Volume Left (vph)	174	0	0	130	0
Volume Right (vph)	0	0	141	0	707
Hadj (s)	0.55	0.05	-0.32	0.25	-0.55
Departure Headway (s)	5.6	5.1	4.5	5.5	3.2
Degree Utilization, x	0.27	0.28	0.28	0.20	0.63
Capacity (veh/h)	623	683	769	608	1118
Control Delay (s)	9.5	8.9	9.3	9.8	11.4
Approach Delay (s)	9.2		9.3	11.2	
Approach LOS	A		A	B	

Intersection Summary			
Delay	10.4		
Level of Service	B		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	210	110	680	50	230	160
Future Volume (veh/h)	210	110	680	50	230	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	223	117	723	0	245	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	283	1097	1203		486	475
Arrive On Green	0.16	0.59	0.34	0.00	0.14	0.14
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	223	117	723	0	245	170
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	5.7	1.3	8.0	0.0	3.1	4.0
Cycle Q Clear(g_c), s	5.7	1.3	8.0	0.0	3.1	4.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	283	1097	1203		486	475
V/C Ratio(X)	0.79	0.11	0.60		0.50	0.36
Avail Cap(c_a), veh/h	748	2181	2336		1649	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	4.2	12.8	0.0	18.6	12.8
Incr Delay (d2), s/veh	1.9	0.0	0.2	0.0	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.3	2.6	0.0	1.1	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	4.2	13.0	0.0	18.9	13.0
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		340	723	A	415	
Approach Delay, s/veh		15.1	13.0		16.4	
Approach LOS		B	B		B	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	33.6	13.1	11.7	22.0
Change Period (Y+Rc), s	6.0	6.5	* 4.2	6.0
Max Green Setting (Gmax), s	55.0	22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s	3.3	6.0	7.7	10.0
Green Ext Time (p_c), s	0.4	0.7	0.2	3.4

Intersection Summary	
HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	0	210	0	0	10	310	210	0	10	630	170
Future Volume (veh/h)	110	0	210	0	0	10	310	210	0	10	630	170
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	0	221				326	221	0	11	663	179
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	776	0	539				450	1685	0	20	968	261
Arrive On Green	0.22	0.00	0.22				0.13	0.48	0.00	0.01	0.36	0.36
Sat Flow, veh/h	3534	0	1514				3428	3618	0	1767	2703	729
Grp Volume(v), veh/h	116	0	221				326	221	0	11	432	410
Grp Sat Flow(s),veh/h/ln	1767	0	1514				1714	1763	0	1767	1763	1669
Q Serve(g_s), s	1.3	0.0	5.6				4.6	1.8	0.0	0.3	10.5	10.5
Cycle Q Clear(g_c), s	1.3	0.0	5.6				4.6	1.8	0.0	0.3	10.5	10.5
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	776	0	539				450	1685	0	20	631	598
V/C Ratio(X)	0.15	0.00	0.41				0.72	0.13	0.00	0.55	0.68	0.69
Avail Cap(c_a), veh/h	2114	0	1112				519	1778	0	180	801	759
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	12.4				20.9	7.3	0.0	24.7	13.7	13.7
Incr Delay (d2), s/veh	0.1	0.0	0.8				3.2	0.0	0.0	8.4	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.2				1.9	0.5	0.0	0.2	3.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	13.2				24.1	7.3	0.0	33.1	15.8	15.9
LnGrp LOS	B	A	B				C	A	A	C	B	B
Approach Vol, veh/h		337						547			853	
Approach Delay, s/veh		14.1						17.3			16.1	
Approach LOS		B						B			B	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	5.0	28.9	16.3	11.0	22.9
Change Period (Y+Rc), s	4.4	4.9	5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3	30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.3	3.8	7.6	6.6	12.5
Green Ext Time (p_c), s	0.0	1.5	2.1	0.1	4.9

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	60	10	170	30	350	30	100	590	30
Future Volume (veh/h)	10	10	10	60	10	170	30	350	30	100	590	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	62	10	177	31	365	31	104	615	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	218	203	152	179	55	307	51	1406	117	133	1166	59
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.30	0.30	0.07	0.34	0.34
Sat Flow, veh/h	357	712	535	247	192	1079	1767	4742	395	1767	3406	171
Grp Volume(v), veh/h	30	0	0	249	0	0	31	258	138	104	318	328
Grp Sat Flow(s),veh/h/ln	1604	0	0	1518	0	0	1767	1689	1760	1767	1763	1814
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.7	2.4	2.5	2.4	6.0	6.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	5.6	0.0	0.0	0.7	2.4	2.5	2.4	6.0	6.0
Prop In Lane	0.33		0.33	0.25		0.71	1.00		0.22	1.00		0.09
Lane Grp Cap(c), veh/h	573	0	0	541	0	0	51	1001	522	133	604	621
V/C Ratio(X)	0.05	0.00	0.00	0.46	0.00	0.00	0.61	0.26	0.26	0.78	0.53	0.53
Avail Cap(c_a), veh/h	1222	0	0	1198	0	0	240	2052	1069	453	1284	1322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	12.5	0.0	0.0	19.8	11.1	11.1	18.8	10.9	10.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	4.2	0.2	0.4	3.8	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.6	0.0	0.0	0.3	0.7	0.8	1.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	0.0	12.8	0.0	0.0	24.0	11.3	11.5	22.6	11.8	11.8
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			249			427			750	
Approach Delay, s/veh		10.8			12.8			12.3			13.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	7.5	17.1	16.7	5.6	19.0	16.7
Change Period (Y+Rc), s	4.4	4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	10.6	25.1	30.1	5.6	30.1	30.1
Max Q Clear Time (g_c+I1), s	4.4	4.5	2.5	2.7	8.0	7.6
Green Ext Time (p_c), s	0.1	3.2	0.1	0.0	5.4	1.0

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	310	150	130	540	0	110	0	110	0	0	0
Future Volume (veh/h)	0	310	150	130	540	0	110	0	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.85		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	320	155	134	557	0	113	0	113	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	895	391	169	1562	0	390	0	224	0	273	0
Arrive On Green	0.00	0.34	0.34	0.10	0.56	0.00	0.15	0.00	0.15	0.00	0.00	0.00
Sat Flow, veh/h	0	2790	1161	1767	2849	0	1200	0	1523	0	1856	0
Grp Volume(v), veh/h	0	320	155	134	557	0	113	0	113	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1161	1767	1388	0	1200	0	1523	0	1856	0
Q Serve(g_s), s	0.0	3.1	3.5	2.5	3.7	0.0	3.0	0.0	2.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.1	3.5	2.5	3.7	0.0	3.0	0.0	2.3	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	895	391	169	1562	0	390	0	224	0	273	0
V/C Ratio(X)	0.00	0.36	0.40	0.79	0.36	0.00	0.29	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1976	863	293	2884	0	1282	0	1357	0	1703	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.5	8.6	14.9	4.0	0.0	13.6	0.0	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.6	3.1	0.1	0.0	0.2	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.7	1.0	0.4	0.0	0.7	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.7	9.2	18.1	4.1	0.0	13.7	0.0	13.9	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		475			691			226			0	
Approach Delay, s/veh		8.9			6.8			13.8			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	7.6	16.3		9.9		23.9		9.9
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	4.5	5.5		0.0		5.7		5.0
Green Ext Time (p_c), s	0.0	3.0		0.0		2.7		0.7

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	240	150	290	230	130	180	400	180	60	210	130
Future Volume (veh/h)	70	240	150	290	230	130	180	400	180	60	210	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.93	1.00		0.95	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	75	258	161	312	247	140	194	430	194	65	226	140
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	891	541	333	570	451	143	1013	491	77	924	363
Arrive On Green	0.05	0.32	0.32	0.12	0.39	0.39	0.08	0.29	0.29	0.06	0.26	0.26
Sat Flow, veh/h	1767	2776	1289	2699	1461	1155	1767	3526	1179	1391	3526	1386
Grp Volume(v), veh/h	75	258	161	312	247	140	194	430	194	65	226	140
Grp Sat Flow(s),veh/h/ln	1767	1388	1289	1350	1461	1155	1767	1763	1179	1391	1763	1386
Q Serve(g_s), s	4.6	7.7	9.4	12.6	13.7	9.3	8.9	10.9	12.8	5.1	5.6	9.1
Cycle Q Clear(g_c), s	4.6	7.7	9.4	12.6	13.7	9.3	8.9	10.9	12.8	5.1	5.6	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	891	541	333	570	451	143	1013	491	77	924	363
V/C Ratio(X)	0.78	0.29	0.30	0.94	0.43	0.31	1.36	0.42	0.39	0.84	0.24	0.39
Avail Cap(c_a), veh/h	151	910	550	333	570	451	143	1214	559	114	1217	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	28.0	22.5	47.8	24.6	23.3	50.6	31.9	22.9	51.5	32.0	33.3
Incr Delay (d2), s/veh	5.2	0.2	0.4	32.6	0.3	0.2	199.7	0.3	0.5	20.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.6	2.9	5.7	4.7	2.5	11.8	4.7	3.6	2.2	2.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	28.2	22.9	80.4	24.9	23.5	250.3	32.1	23.4	71.6	32.1	33.6
LnGrp LOS	E	C	C	F	C	C	F	C	C	E	C	C
Approach Vol, veh/h		494			699			818			431	
Approach Delay, s/veh		30.8			49.4			81.8			38.5	
Approach LOS		C			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	41.3	14.3	35.6	11.4	48.9	11.5	38.3
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	14.6	11.4	10.9	11.1	6.6	15.7	7.1	14.8
Green Ext Time (p_c), s	0.0	2.9	0.0	1.3	0.0	1.3	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	54.6
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	20	40	430	440	100
Future Vol, veh/h	30	20	40	430	440	100
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	31	20	41	439	449	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	906	604	645	0	-	0
Stage 1	594	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	289	495	932	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	446	849	-	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	20.5		0.8		0	
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	849	-	283	-	-
HCM Lane V/C Ratio	0.048	-	0.18	-	-
HCM Control Delay (s)	9.5	-	20.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	470	300	260	1580	0	0	2260	410
Future Volume (veh/h)	0	0	0	90	470	300	260	1580	0	0	2260	410
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	485	309	268	1629	0	0	2330	423
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	555	382	179	3132	0	0	2429	725
Arrive On Green				0.31	0.31	0.31	0.20	1.00	0.00	0.00	0.48	0.48
Sat Flow, veh/h				342	1813	1248	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				500	0	387	268	1629	0	0	2330	423
Grp Sat Flow(s),veh/h/ln				1838	0	1565	1767	1689	0	0	1689	1513
Q Serve(g_s), s				33.7	0.0	29.7	13.2	0.0	0.0	0.0	57.6	26.3
Cycle Q Clear(g_c), s				33.7	0.0	29.7	13.2	0.0	0.0	0.0	57.6	26.3
Prop In Lane				0.19		0.80	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				563	0	479	179	3132	0	0	2429	725
V/C Ratio(X)				0.89	0.00	0.81	1.50	0.52	0.00	0.00	0.96	0.58
Avail Cap(c_a), veh/h				622	0	530	179	3132	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.69	0.69	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.6	51.8	0.0	0.0	0.0	32.6	24.4
Incr Delay (d2), s/veh				12.8	0.0	7.4	243.8	0.4	0.0	0.0	10.9	3.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				17.2	0.0	12.4	17.2	0.1	0.0	0.0	25.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				55.8	0.0	49.0	295.6	0.4	0.0	0.0	43.5	27.9
LnGrp LOS				E	A	D	F	A	A	A	D	C
Approach Vol, veh/h					887			1897			2753	
Approach Delay, s/veh					52.8			42.1			41.1	
Approach LOS					D			D			D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		85.3		44.7	18.1	67.2
Change Period (Y+Rc), s		4.9		4.9	4.9	* 4.9
Max Green Setting (Gmax), s		76.2		44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s		2.0		35.7	15.2	59.6
Green Ext Time (p_c), s		5.6		1.7	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	220	110	0	0	0	0	1580	20	230	2190	0
Future Volume (veh/h)	270	220	110	0	0	0	0	1580	20	230	2190	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	258	268	116				0	1663	21	242	2305	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	336	353	288				0	2846	36	262	4687	0
Arrive On Green	0.19	0.19	0.19				0.00	1.00	1.00	0.30	1.00	0.00
Sat Flow, veh/h	1767	1856	1511				0	5321	65	1767	6643	0
Grp Volume(v), veh/h	258	268	116				0	1090	594	242	2305	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1511				0	1689	1842	1767	1596	0
Q Serve(g_s), s	18.0	17.8	8.7				0.0	0.0	0.0	17.2	0.0	0.0
Cycle Q Clear(g_c), s	18.0	17.8	8.7				0.0	0.0	0.0	17.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	336	353	288				0	1865	1017	262	4687	0
V/C Ratio(X)	0.77	0.76	0.40				0.00	0.58	0.58	0.92	0.49	0.00
Avail Cap(c_a), veh/h	613	644	524				0	1865	1017	294	4687	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.74	0.74	0.28	0.28	0.00
Uniform Delay (d), s/veh	49.9	49.8	46.1				0.0	0.0	0.0	45.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	1.3	0.3				0.0	1.0	1.8	11.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	8.4	3.3				0.0	0.3	0.5	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	51.1	46.5				0.0	1.0	1.8	56.7	0.1	0.0
LnGrp LOS	D	D	D				A	A	A	E	A	A
Approach Vol, veh/h		642						1684			2547	
Approach Delay, s/veh		50.3						1.3			5.5	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.7	76.7		29.6		100.4
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	21.6	49.1		45.1		75.1
Max Q Clear Time (g_c+I1), s	19.2	2.0		20.0		2.0
Green Ext Time (p_c), s	0.0	4.9		0.7		10.6

Intersection Summary			
HCM 6th Ctrl Delay			9.9
HCM 6th LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	220	10	150	0	260	0	340	150	60	260	0
Future Volume (veh/h)	200	220	10	150	0	260	0	340	150	60	260	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.85	0.95		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	215	237	11	161	0	280	0	366	161	65	280	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	425	422	20	0	0	0	0	898	382	474	1912	0
Arrive On Green	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.40	0.40	0.05	0.54	0.00
Sat Flow, veh/h	1767	1755	81		0		0	2364	965	1767	3618	0
Grp Volume(v), veh/h	215	0	248		0.0		0	281	246	65	280	0
Grp Sat Flow(s),veh/h/ln	1767	0	1836				0	1763	1473	1767	1763	0
Q Serve(g_s), s	4.7	0.0	5.3				0.0	5.2	5.5	0.9	1.8	0.0
Cycle Q Clear(g_c), s	4.7	0.0	5.3				0.0	5.2	5.5	0.9	1.8	0.0
Prop In Lane	1.00		0.04				0.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	425	0	442				0	697	582	474	1912	0
V/C Ratio(X)	0.51	0.00	0.56				0.00	0.40	0.42	0.14	0.15	0.00
Avail Cap(c_a), veh/h	905	0	940				0	942	787	606	2665	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.8	0.0	15.0				0.0	9.8	9.9	6.8	5.1	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.1				0.0	1.7	2.2	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.0				0.0	1.9	1.7	0.2	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	16.2				0.0	11.6	12.1	6.8	5.3	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		463						527			345	
Approach Delay, s/veh		16.0						11.8			5.6	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.6	22.7		15.8		29.4
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	24.1		23.1		34.1
Max Q Clear Time (g_c+I1), s	2.9	7.5		7.3		3.8
Green Ext Time (p_c), s	0.0	7.5		1.9		5.1

Intersection Summary			
HCM 6th Ctrl Delay			11.6
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	210	120	170	220	20	120	1440	280	0	1850	370
Future Volume (veh/h)	180	210	120	170	220	20	120	1440	280	0	1850	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.95	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	137	294	126	144	281	21	126	1516	295	0	1947	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	383	804	306	177	340	25	140	2320	450	0	2354	
Arrive On Green	0.22	0.22	0.22	0.10	0.10	0.10	0.08	1.00	1.00	0.00	0.93	0.00
Sat Flow, veh/h	1767	3711	1414	1767	3400	252	3428	4242	822	0	5233	1572
Grp Volume(v), veh/h	137	294	126	144	152	150	126	1206	605	0	1947	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1414	1767	1856	1796	1714	1689	1686	0	1689	1572
Q Serve(g_s), s	8.6	8.8	10.0	10.4	10.5	10.6	4.7	0.0	0.0	0.0	15.2	0.0
Cycle Q Clear(g_c), s	8.6	8.8	10.0	10.4	10.5	10.6	4.7	0.0	0.0	0.0	15.2	0.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.49	0.00		1.00
Lane Grp Cap(c), veh/h	383	804	306	177	186	180	140	1847	923	0	2354	
V/C Ratio(X)	0.36	0.37	0.41	0.81	0.82	0.83	0.90	0.65	0.66	0.00	0.83	
Avail Cap(c_a), veh/h	489	1028	392	245	257	249	140	1847	923	0	2354	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	0.74	0.74	0.74	0.00	0.85	0.00
Uniform Delay (d), s/veh	43.2	43.3	43.8	57.3	57.3	57.4	59.4	0.0	0.0	0.0	3.0	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.3	9.3	9.5	11.1	38.3	1.3	2.7	0.0	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.1	3.5	5.1	5.4	5.4	2.7	0.3	0.7	0.0	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	43.4	44.1	66.6	66.8	68.5	97.7	1.3	2.7	0.0	6.0	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	A	
Approach Vol, veh/h		557			446			1937			1947	A
Approach Delay, s/veh		43.6			67.3			8.0			6.0	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		77.0		34.1	10.7	66.3		18.9
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		2.0		12.0	6.7	17.2		12.6
Green Ext Time (p_c), s		5.8		0.8	0.0	7.2		0.4

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	230	130	100	340	170	160	1400	100	240	1490	140
Future Volume (veh/h)	230	230	130	100	340	170	160	1400	100	240	1490	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	240	135	104	354	177	167	1458	104	250	1552	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	290	649	278	127	590	247	217	1604	114	885	2498	235
Arrive On Green	0.08	0.18	0.18	0.07	0.17	0.17	0.06	0.33	0.33	0.52	1.00	1.00
Sat Flow, veh/h	3428	3526	1510	1767	3526	1479	3428	4816	343	3428	4700	442
Grp Volume(v), veh/h	240	240	135	104	354	177	167	1022	540	250	1115	583
Grp Sat Flow(s),veh/h/ln	1714	1763	1510	1767	1763	1479	1714	1689	1782	1714	1689	1764
Q Serve(g_s), s	9.0	7.7	10.4	7.5	12.1	14.7	6.2	37.6	37.7	5.4	0.0	0.0
Cycle Q Clear(g_c), s	9.0	7.7	10.4	7.5	12.1	14.7	6.2	37.6	37.7	5.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.25
Lane Grp Cap(c), veh/h	290	649	278	127	590	247	217	1124	593	885	1795	938
V/C Ratio(X)	0.83	0.37	0.49	0.82	0.60	0.72	0.77	0.91	0.91	0.28	0.62	0.62
Avail Cap(c_a), veh/h	359	881	378	171	854	358	282	1343	709	885	1795	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69	0.55	0.55	0.55
Uniform Delay (d), s/veh	58.6	46.4	47.5	59.5	50.1	51.2	59.9	41.5	41.5	24.6	0.0	0.0
Incr Delay (d2), s/veh	10.2	0.1	0.5	15.1	0.4	1.4	4.5	9.1	15.3	0.0	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.4	4.0	3.9	5.4	5.6	2.8	16.8	18.8	2.0	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.8	46.6	48.0	74.6	50.5	52.6	64.5	50.5	56.8	24.7	0.9	1.7
LnGrp LOS	E	D	D	E	D	D	E	D	E	C	A	A
Approach Vol, veh/h		615			635			1729			1948	
Approach Delay, s/veh		55.5			55.0			53.8			4.2	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	48.2	13.7	28.8	12.6	74.8	15.9	26.7
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	4.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	7.4	39.7	9.5	12.4	8.2	2.0	11.0	16.7
Green Ext Time (p_c), s	0.1	3.6	0.0	0.6	0.0	5.1	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	320	10	620	340	110	10	1090	510	120	1520	220
Future Volume (veh/h)	370	320	10	620	340	110	10	1090	510	120	1520	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	378	327	10	633	347	112	10	1112	520	122	1551	224
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	377	12	612	392	320	21	2088	632	169	1586	680
Arrive On Green	0.17	0.21	0.21	0.18	0.21	0.21	0.01	0.41	0.41	0.10	0.90	0.90
Sat Flow, veh/h	1767	1789	55	3428	1856	1516	1767	5066	1534	3428	3526	1511
Grp Volume(v), veh/h	378	0	337	633	347	112	10	1112	520	122	1551	224
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1714	1856	1516	1767	1689	1534	1714	1763	1511
Q Serve(g_s), s	22.6	0.0	23.0	23.2	23.6	6.9	0.7	21.5	39.2	4.5	47.6	1.5
Cycle Q Clear(g_c), s	22.6	0.0	23.0	23.2	23.6	6.9	0.7	21.5	39.2	4.5	47.6	1.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	388	612	392	320	21	2088	632	169	1586	680
V/C Ratio(X)	1.23	0.00	0.87	1.03	0.88	0.35	0.49	0.53	0.82	0.72	0.98	0.33
Avail Cap(c_a), veh/h	307	0	474	612	485	396	69	2088	632	232	1586	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	53.7	0.0	49.6	53.4	49.7	31.3	63.9	28.8	34.0	57.7	6.0	1.1
Incr Delay (d2), s/veh	128.9	0.0	11.9	43.8	12.2	0.2	6.4	1.0	11.5	2.5	14.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.0	0.0	11.9	13.7	12.3	2.6	0.4	8.8	16.4	1.9	5.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	182.6	0.0	61.5	97.2	61.9	31.5	70.3	29.8	45.5	60.2	20.7	2.0
LnGrp LOS	F	A	E	F	E	C	E	C	D	E	C	A
Approach Vol, veh/h		715			1092			1642			1897	
Approach Delay, s/veh		125.5			79.2			35.0			21.0	
Approach LOS		F			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	59.3	27.6	32.3	5.9	64.2	27.5	32.4
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	16.5	41.2	25.2	25.0	2.7	49.6	24.6	25.6
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	730	190	590	890	80	160
Future Volume (veh/h)	730	190	590	890	80	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	768	200	621	937	84	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	893	233	560	2424	106	212
Arrive On Green	0.33	0.33	0.32	0.69	0.20	0.20
Sat Flow, veh/h	2829	713	1767	3618	535	1070
Grp Volume(v), veh/h	495	473	621	937	253	0
Grp Sat Flow(s),veh/h/ln	1763	1687	1767	1763	1611	0
Q Serve(g_s), s	23.6	23.6	28.5	10.2	13.4	0.0
Cycle Q Clear(g_c), s	23.6	23.6	28.5	10.2	13.4	0.0
Prop In Lane		0.42	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	575	551	560	2424	319	0
V/C Ratio(X)	0.86	0.86	1.11	0.39	0.79	0.00
Avail Cap(c_a), veh/h	575	551	560	2424	447	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.4	28.4	30.7	6.0	34.3	0.0
Incr Delay (d2), s/veh	11.8	12.3	71.8	0.5	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	11.1	22.8	3.3	5.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.2	40.6	102.5	6.5	38.5	0.0
LnGrp LOS	D	D	F	A	D	A
Approach Vol, veh/h	968			1558	253	
Approach Delay, s/veh	40.4			44.7	38.5	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.5	34.8				67.3		22.7
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	25.6				12.2		15.4
Green Ext Time (p_c), s	0.0	0.0				8.4		0.3

Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	230	550	20	0	450
Future Vol, veh/h	0	230	550	20	0	450
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	264	632	23	0	517

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	348	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	645	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	633	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	633	-
HCM Lane V/C Ratio	-	-	0.418	-
HCM Control Delay (s)	-	-	14.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	2.1	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	900	1400	560	390	60
Future Volume (veh/h)	0	900	1400	560	390	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	918	1429	571	398	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1877	1877	1163	775	
Arrive On Green	0.00	0.53	0.53	0.53	0.23	0.00
Sat Flow, veh/h	0	3711	3618	1516	3428	1572
Grp Volume(v), veh/h	0	918	1429	571	398	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1516	1714	1572
Q Serve(g_s), s	0.0	7.2	14.0	6.4	4.5	0.0
Cycle Q Clear(g_c), s	0.0	7.2	14.0	6.4	4.5	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1877	1877	1163	775	
V/C Ratio(X)	0.00	0.49	0.76	0.49	0.51	
Avail Cap(c_a), veh/h	0	2040	2040	1232	1874	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	8.1	2.1	14.9	0.0
Incr Delay (d2), s/veh	0.0	0.2	1.6	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	3.8	2.7	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.7	9.7	2.4	15.3	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		918	2000		398	A
Approach Delay, s/veh		6.7	7.6		15.3	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		28.8		15.1		28.8
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		9.2		6.5		16.0
Green Ext Time (p_c), s		5.8		1.0		7.4

Intersection Summary			
HCM 6th Ctrl Delay			8.3
HCM 6th LOS			A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	30	30	0	40	100	600	40	120	430	110
Future Volume (veh/h)	20	0	30	30	0	40	100	600	40	120	430	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.96	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	24	0	35	35	0	47	118	706	47	141	506	129
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	197	39	143	424	0	242	149	1633	108	180	1424	351
Arrive On Green	0.16	0.00	0.16	0.16	0.00	0.16	0.08	0.34	0.34	0.10	0.35	0.35
Sat Flow, veh/h	370	241	890	1341	0	1504	1767	4837	320	1767	4012	989
Grp Volume(v), veh/h	59	0	0	35	0	47	118	491	262	141	423	212
Grp Sat Flow(s),veh/h/ln	1500	0	0	1341	0	1504	1767	1689	1780	1767	1689	1624
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	2.4	4.1	4.2	2.9	3.4	3.6
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.6	0.0	1.0	2.4	4.1	4.2	2.9	3.4	3.6
Prop In Lane	0.41		0.59	1.00		1.00	1.00		0.18	1.00		0.61
Lane Grp Cap(c), veh/h	379	0	0	424	0	242	149	1140	601	180	1199	576
V/C Ratio(X)	0.16	0.00	0.00	0.08	0.00	0.19	0.79	0.43	0.44	0.78	0.35	0.37
Avail Cap(c_a), veh/h	1390	0	0	1375	0	1308	322	1910	1006	365	1983	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	0.0	13.2	0.0	13.4	16.5	9.4	9.5	16.1	8.7	8.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.1	3.5	0.3	0.7	2.8	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.2	0.0	0.3	1.0	1.2	1.3	1.1	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	0.0	13.2	0.0	13.5	20.0	9.8	10.1	18.9	9.0	9.3
LnGrp LOS	B	A	A	B	A	B	C	A	B	B	A	A
Approach Vol, veh/h		59			82			871			776	
Approach Delay, s/veh		13.5			13.4			11.3			10.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	17.8		10.8	7.5	18.5		10.8
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	4.9	6.2		3.2	4.4	5.6		3.0
Green Ext Time (p_c), s	0.0	5.4		0.2	0.0	4.3		0.2

Intersection Summary		
HCM 6th Ctrl Delay		11.3
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	290	450	730	450	10
Future Vol, veh/h	0	290	450	730	450	10
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	322	500	811	500	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	276	521	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	613	658	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	601	652	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	10	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	652	-	601	-	-
HCM Lane V/C Ratio	0.767	-	0.536	-	-
HCM Control Delay (s)	26.3	-	17.7	-	-
HCM Lane LOS	D	-	C	-	-
HCM 95th %tile Q(veh)	7.2	-	3.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	80	0	1190	650	80
Future Vol, veh/h	0	80	0	1190	650	80
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	92	0	1368	747	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	440	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	562	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	551	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	551	-	-
HCM Lane V/C Ratio	-	0.167	-	-
HCM Control Delay (s)	-	12.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	20	20	20	30	10	360	1170	260	110	460	150
Future Volume (veh/h)	20	20	20	20	30	10	360	1170	260	110	460	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.70	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	22	22	22	22	33	11	400	1300	289	122	511	167
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	31	633	537	31	633	375	281	1268	525	144	749	243
Arrive On Green	0.02	0.34	0.34	0.02	0.34	0.34	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1099	1767	3526	1461	1767	2579	837
Grp Volume(v), veh/h	22	22	22	22	33	11	400	1300	289	122	348	330
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1099	1767	1763	1461	1767	1763	1654
Q Serve(g_s), s	1.4	0.9	1.1	1.4	1.4	0.8	18.6	42.0	18.4	8.0	20.4	20.7
Cycle Q Clear(g_c), s	1.4	0.9	1.1	1.4	1.4	0.8	18.6	42.0	18.4	8.0	20.4	20.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	31	633	537	31	633	375	281	1268	525	144	512	480
V/C Ratio(X)	0.71	0.03	0.04	0.71	0.05	0.03	1.42	1.03	0.55	0.85	0.68	0.69
Avail Cap(c_a), veh/h	77	633	537	88	636	376	281	1268	525	144	527	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	25.6	25.7	57.1	25.8	25.6	49.1	37.4	29.9	52.9	36.7	36.7
Incr Delay (d2), s/veh	10.7	0.0	0.0	10.7	0.0	0.0	209.1	31.9	1.4	33.9	5.2	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.4	0.7	0.6	0.2	24.5	23.3	6.6	4.9	9.5	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	25.7	25.7	67.8	25.8	25.6	258.2	69.3	31.3	86.8	41.9	42.5
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	D	D
Approach Vol, veh/h		66			66			1989			800	
Approach Delay, s/veh		39.7			39.8			101.8			49.0	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	50.7	6.4	44.7	23.0	42.6	6.4	44.7
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.0	44.0	3.4	3.1	20.6	22.7	3.4	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	6.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	84.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	252.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1290	1810	1790	400	100
Future Vol, veh/h	0	1290	1810	1790	400	100
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1402	1967	1946	435	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	238	554	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 760	~ 1005	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 746	~ 995	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 415.7	229.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 995	-	746	-	-
HCM Lane V/C Ratio	1.977	-	1.88	-	-
HCM Control Delay (s)	$ 455.6	-	$ 415.7	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	127.3	-	88	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	100	290	200	10	260	80	180	0	30	10
Future Volume (veh/h)	0	50	100	290	200	10	260	80	180	0	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	0.98		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	65	130	377	260	13	338	104	234	0	39	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	120	211	423	487	702	35	393	94	210	0	573	191
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	1097	527	1053	1157	1747	87	697	216	484	0	1316	439
Grp Volume(v), veh/h	0	0	195	377	0	273	676	0	0	0	0	52
Grp Sat Flow(s),veh/h/ln	1097	0	1580	1157	0	1834	1397	0	0	0	0	1755
Q Serve(g_s), s	0.0	0.0	5.1	19.0	0.0	6.3	25.1	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.0	0.0	5.1	24.1	0.0	6.3	26.1	0.0	0.0	0.0	0.0	1.0
Prop In Lane	1.00		0.67	1.00		0.05	0.50		0.35	0.00		0.25
Lane Grp Cap(c), veh/h	120	0	634	487	0	737	698	0	0	0	0	763
V/C Ratio(X)	0.00	0.00	0.31	0.77	0.00	0.37	0.97	0.00	0.00	0.00	0.00	0.07
Avail Cap(c_a), veh/h	120	0	634	487	0	737	698	0	0	0	0	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	12.3	20.7	0.0	12.6	18.7	0.0	0.0	0.0	0.0	9.9
Incr Delay (d2), s/veh	0.0	0.0	0.4	7.7	0.0	0.3	26.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.6	5.8	0.0	2.3	13.7	0.0	0.0	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	12.7	28.4	0.0	13.0	45.1	0.0	0.0	0.0	0.0	9.9
LnGrp LOS	A	A	B	C	A	B	D	A	A	A	A	A
Approach Vol, veh/h		195			650			676			52	
Approach Delay, s/veh		12.7			21.9			45.1			9.9	
Approach LOS		B			C			D			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		31.0		29.0		31.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		24.1		26.1		24.1		26.1				
Max Q Clear Time (g_c+I1), s		7.1		3.0		26.1		28.1				
Green Ext Time (p_c), s		1.6		0.1		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			30.3
HCM 6th LOS			C

23: Old Town Ave & Moore St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	30	270	270	120	370	40	0	210	260
Future Volume (veh/h)	0	0	10	30	270	270	120	370	40	0	210	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	12	37	333	333	148	457	49	0	259	321
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	299	284	134	267	25	0	327	406
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	47	825	785	104	604	57	0	740	918
Grp Volume(v), veh/h	0	0	12	703	0	0	654	0	0	0	0	580
Grp Sat Flow(s),veh/h/ln	0	0	1572	1656	0	0	765	0	0	0	0	1658
Q Serve(g_s), s	0.0	0.0	0.2	9.8	0.0	0.0	7.1	0.0	0.0	0.0	0.0	15.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	15.0
Prop In Lane	0.00		1.00	0.05		0.47	0.23		0.07	0.00		0.55
Lane Grp Cap(c), veh/h	0	0	569	675	0	0	426	0	0	0	0	733
V/C Ratio(X)	0.00	0.00	0.02	1.04	0.00	0.00	1.53	0.00	0.00	0.00	0.00	0.79
Avail Cap(c_a), veh/h	0	0	569	675	0	0	426	0	0	0	0	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	16.9	0.0	0.0	0.0	0.0	12.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	45.7	0.0	0.0	252.0	0.0	0.0	0.0	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	15.4	0.0	0.0	34.5	0.0	0.0	0.0	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.3	62.6	0.0	0.0	268.9	0.0	0.0	0.0	0.0	17.4
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	B
Approach Vol, veh/h		12			703			654			580	
Approach Delay, s/veh		10.3			62.6			268.9			17.4	
Approach LOS		B			E			F			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0		23.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		22.1		18.1		22.1		18.1				
Max Q Clear Time (g_c+I1), s		24.1		2.2		17.0		20.1				
Green Ext Time (p_c), s		0.0		0.0		1.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			118.1									
HCM 6th LOS			F									

24: Hancock St/Old Town Ave & I-5 SB Off-Ramp

Intersection	
Intersection Delay, s/veh	34.6
Intersection LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	350	670	0	110	60	0
Future Vol, veh/h	350	670	0	110	60	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	417	798	0	131	71	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	38.6	10.7	10
HCM LOS	E	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	350	670	60
LT Vol	0	350	0	0
Through Vol	110	0	0	60
RT Vol	0	0	670	0
Lane Flow Rate	131	417	798	71
Geometry Grp	2	7	7	2
Degree of Util (X)	0.218	0.655	0.987	0.121
Departure Headway (Hd)	5.991	5.66	4.454	6.108
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	597	637	814	584
Service Time	4.046	3.401	2.195	4.171
HCM Lane V/C Ratio	0.219	0.655	0.98	0.122
HCM Control Delay	10.7	18.6	49	10
HCM Lane LOS	B	C	E	A
HCM 95th-tile Q	0.8	4.8	16.6	0.4

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	210	550	10	30	0	80	0	90	0	0	0
Future Vol, veh/h	0	210	550	10	30	0	80	0	90	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	239	625	11	34	0	91	0	102	0	0	0
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	17.7	8.9	10.7	0
HCM LOS	C	A	B	-

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	47%	0%	0%	25%	0%
Vol Thru, %	0%	100%	0%	75%	100%
Vol Right, %	53%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	210	550	40	0
LT Vol	80	0	0	10	0
Through Vol	0	210	0	30	0
RT Vol	90	0	550	0	0
Lane Flow Rate	193	239	625	45	0
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.29	0.34	0.769	0.068	0
Departure Headway (Hd)	5.395	5.133	4.429	5.41	5.973
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	663	699	813	657	0
Service Time	3.455	2.877	2.173	3.484	4.065
HCM Lane V/C Ratio	0.291	0.342	0.769	0.068	0
HCM Control Delay	10.7	10.5	20.4	8.9	9.1
HCM Lane LOS	B	B	C	A	N
HCM 95th-tile Q	1.2	1.5	7.5	0.2	0

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	90	70	110	220	340
Future Vol, veh/h	60	90	70	110	220	340
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	63	94	73	115	229	354
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.7	10	16.4
HCM LOS	A	A	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	39%	100%	0%	0%
Vol Thru, %	61%	0%	0%	39%
Vol Right, %	0%	0%	100%	61%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	60	90	560
LT Vol	70	60	0	0
Through Vol	110	0	0	220
RT Vol	0	0	90	340
Lane Flow Rate	188	62	94	583
Geometry Grp	2	7	7	2
Degree of Util (X)	0.265	0.118	0.146	0.691
Departure Headway (Hd)	5.083	6.81	5.592	4.264
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	529	645	846
Service Time	3.163	4.51	3.292	2.315
HCM Lane V/C Ratio	0.269	0.117	0.146	0.689
HCM Control Delay	10	10.4	9.2	16.4
HCM Lane LOS	A	B	A	C
HCM 95th-tile Q	1.1	0.4	0.5	5.7

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	110	0	70	30	20	290	0
Future Vol, veh/h	0	0	0	10	0	110	0	70	30	20	290	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	0	124	0	79	34	22	326	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	8.4	8.2	11
HCM LOS	-	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	8%	6%
Vol Thru, %	100%	0%	100%	0%	94%
Vol Right, %	0%	100%	0%	92%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	30	0	120	310
LT Vol	0	0	0	10	20
Through Vol	70	0	0	0	290
RT Vol	0	30	0	110	0
Lane Flow Rate	79	34	0	135	348
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.112	0.042	0	0.168	0.436
Departure Headway (Hd)	5.14	4.435	5.195	4.474	4.505
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	806	0	802	801
Service Time	2.873	2.167	3.237	2.502	2.532
HCM Lane V/C Ratio	0.113	0.042	0	0.168	0.434
HCM Control Delay	8.5	7.4	8.2	8.4	11
HCM Lane LOS	A	A	N	A	B
HCM 95th-tile Q	0.4	0.1	0	0.6	2.2

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	110	100	0	0	0	60	40	100	240	110	0
Future Vol, veh/h	110	110	100	0	0	0	60	40	100	240	110	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	115	115	104	0	0	0	63	42	104	250	115	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.5	10.5	14.6
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	30%	34%	69%
Vol Thru, %	20%	34%	31%
Vol Right, %	50%	31%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	200	320	350
LT Vol	60	110	240
Through Vol	40	110	110
RT Vol	100	100	0
Lane Flow Rate	208	333	365
Geometry Grp	1	1	1
Degree of Util (X)	0.302	0.494	0.542
Departure Headway (Hd)	5.211	5.334	5.348
Convergence, Y/N	Yes	Yes	Yes
Cap	690	677	674
Service Time	3.248	3.368	3.38
HCM Lane V/C Ratio	0.301	0.492	0.542
HCM Control Delay	10.5	13.5	14.6
HCM Lane LOS	B	B	B
HCM 95th-tile Q	1.3	2.8	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	150	290	60	200	620	0	0	750	600
Future Volume (veh/h)	0	0	0	150	290	60	200	620	0	0	750	600
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				158	305	63	211	653	0	0	789	632
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				253	533	109	743	2505	0	0	1535	668
Arrive On Green				0.17	0.17	0.17	0.43	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1463	3081	630	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				192	163	170	211	653	0	0	789	632
Grp Sat Flow(s),veh/h/ln				1782	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				8.4	7.4	7.7	3.3	0.0	0.0	0.0	13.7	33.3
Cycle Q Clear(g_c), s				8.4	7.4	7.7	3.3	0.0	0.0	0.0	13.7	33.3
Prop In Lane				0.82		0.37	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				308	292	295	743	2505	0	0	1535	668
V/C Ratio(X)				0.62	0.56	0.58	0.28	0.26	0.00	0.00	0.51	0.95
Avail Cap(c_a), veh/h				554	525	529	743	2505	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.89	0.89	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.2	31.8	31.9	19.6	0.0	0.0	0.0	17.2	22.8
Incr Delay (d2), s/veh				0.8	0.6	0.7	0.2	0.2	0.0	0.0	1.2	24.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	3.0	3.2	1.2	0.1	0.0	0.0	5.5	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.0	32.4	32.6	19.8	0.2	0.0	0.0	18.5	46.7
LnGrp LOS				C	C	C	B	A	A	A	B	D
Approach Vol, veh/h					526			864			1421	
Approach Delay, s/veh					32.7			5.0			31.1	
Approach LOS					C			A			C	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		64.6			23.1	41.5		19.4
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1
Max Q Clear Time (g_c+I1), s		2.0			5.3	35.3		10.4
Green Ext Time (p_c), s		6.4			0.1	1.3		1.9

Intersection Summary			
HCM 6th Ctrl Delay			23.3
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	280	180	0	0	0	0	340	130	410	490	0
Future Volume (veh/h)	480	280	180	0	0	0	0	340	130	410	490	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	495	289	186				0	351	134	423	505	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	773	406	261				0	1308	569	509	1876	0
Arrive On Green	0.22	0.22	0.22				0.00	0.46	0.46	0.15	0.66	0.00
Sat Flow, veh/h	3534	1856	1194				0	2897	1227	3428	2897	0
Grp Volume(v), veh/h	495	289	186				0	351	134	423	505	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1194				0	1411	1227	1714	1411	0
Q Serve(g_s), s	10.7	12.1	12.1				0.0	6.4	5.5	10.1	6.1	0.0
Cycle Q Clear(g_c), s	10.7	12.1	12.1				0.0	6.4	5.5	10.1	6.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	773	406	261				0	1308	569	509	1876	0
V/C Ratio(X)	0.64	0.71	0.71				0.00	0.27	0.24	0.83	0.27	0.00
Avail Cap(c_a), veh/h	1140	599	385				0	1308	569	678	1876	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.99	0.99	0.91	0.91	0.00
Uniform Delay (d), s/veh	29.8	30.4	30.4				0.0	13.8	13.6	34.7	5.8	0.0
Incr Delay (d2), s/veh	0.3	0.9	1.4				0.0	0.5	1.0	4.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.4	3.5				0.0	2.0	1.6	4.4	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	31.2	31.7				0.0	14.3	14.5	39.3	6.1	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		970						485			928	
Approach Delay, s/veh		30.8						14.4			21.2	
Approach LOS		C						B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.9	43.8		23.3		60.7
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1
Max Q Clear Time (g_c+I1), s	12.1	8.4		14.1		8.1
Green Ext Time (p_c), s	0.4	3.1		2.2		4.3

Intersection Summary			
HCM 6th Ctrl Delay			23.7
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	40	40	30	100	90	350	0	0	580	90
Future Volume (veh/h)	20	0	40	40	30	100	90	350	0	0	580	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	21	0	42	42	31	104	94	365	0	0	604	94
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	25	0	50	285	299	237	120	1425	0	0	986	426
Arrive On Green	0.05	0.00	0.05	0.16	0.16	0.16	0.07	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h	537	0	1075	1767	1856	1473	1767	2897	0	0	2897	1219
Grp Volume(v), veh/h	63	0	0	42	31	104	94	365	0	0	604	94
Grp Sat Flow(s),veh/h/ln	1612	0	0	1767	1856	1473	1767	1411	0	0	1411	1219
Q Serve(g_s), s	2.0	0.0	0.0	1.1	0.7	3.3	2.7	3.8	0.0	0.0	9.1	2.8
Cycle Q Clear(g_c), s	2.0	0.0	0.0	1.1	0.7	3.3	2.7	3.8	0.0	0.0	9.1	2.8
Prop In Lane	0.33		0.67	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	74	0	0	285	299	237	120	1425	0	0	986	426
V/C Ratio(X)	0.85	0.00	0.00	0.15	0.10	0.44	0.78	0.26	0.00	0.00	0.61	0.22
Avail Cap(c_a), veh/h	125	0	0	893	938	745	234	2502	0	0	1860	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	18.5	18.4	19.5	23.6	7.2	0.0	0.0	13.8	11.8
Incr Delay (d2), s/veh	9.9	0.0	0.0	0.1	0.1	0.5	12.4	0.0	0.0	0.0	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.4	0.3	1.0	1.5	0.9	0.0	0.0	2.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	0.0	18.6	18.5	19.9	36.0	7.3	0.0	0.0	14.6	12.1
LnGrp LOS	C	A	A	B	B	B	D	A	A	A	B	B
Approach Vol, veh/h		63			177			459			698	
Approach Delay, s/veh		34.3			19.4			13.2			14.3	
Approach LOS		C			B			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		30.4		6.4	8.0	22.4		14.7				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		5.8		4.0	4.7	11.1		5.3				
Green Ext Time (p_c), s		1.7		0.0	0.0	5.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			15.4
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	40	60	0	0	0	0	250	30	120	200	0
Future Volume (veh/h)	190	40	60	0	0	0	0	250	30	120	200	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	242	0	67				0	278	33	133	222	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1031	0	703				0	517	61	251	479	0
Arrive On Green	0.29	0.00	0.29				0.00	0.16	0.16	0.14	0.14	0.00
Sat Flow, veh/h	3534	0	1526				0	3242	369	1767	3544	0
Grp Volume(v), veh/h	242	0	67				0	154	157	133	222	0
Grp Sat Flow(s),veh/h/ln	1767	0	1526				0	1763	1756	1767	1689	0
Q Serve(g_s), s	1.9	0.0	0.9				0.0	2.9	3.0	2.5	2.2	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.9				0.0	2.9	3.0	2.5	2.2	0.0
Prop In Lane	1.00		1.00				0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	1031	0	703				0	289	288	251	479	0
V/C Ratio(X)	0.23	0.00	0.10				0.00	0.53	0.55	0.53	0.46	0.00
Avail Cap(c_a), veh/h	2873	0	1498				0	685	682	353	675	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	5.6				0.0	13.8	13.8	14.4	14.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0				0.0	0.6	0.6	2.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3				0.0	1.0	1.0	1.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	0.0	5.6				0.0	14.4	14.4	16.3	15.0	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		309						311			355	
Approach Delay, s/veh		8.9						14.4			15.5	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				9.9		16.7		9.4				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				5.0		3.9		4.5				
Green Ext Time (p_c), s				0.8		0.6		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			13.0
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

33: Pacific Hwy & Sassafras St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	140	70	290	440	100	170	260	60	60	280	100
Future Volume (veh/h)	80	140	70	290	440	100	170	260	60	60	280	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	92	161	80	333	506	115	195	299	69	69	322	115
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	109	560	557	205	534	121	141	860	187	83	689	228
Arrive On Green	0.06	0.36	0.36	0.14	0.44	0.44	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	1767	1537	1531	1464	1206	274	1767	4109	894	1464	3704	1226
Grp Volume(v), veh/h	92	161	80	333	0	621	195	243	125	69	291	146
Grp Sat Flow(s),veh/h/ln	1767	1537	1531	1464	0	1480	1767	1689	1626	1464	1689	1553
Q Serve(g_s), s	4.3	6.1	2.9	11.6	0.0	33.3	6.6	5.1	5.5	3.9	6.4	7.0
Cycle Q Clear(g_c), s	4.3	6.1	2.9	11.6	0.0	33.3	6.6	5.1	5.5	3.9	6.4	7.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.55	1.00		0.79
Lane Grp Cap(c), veh/h	109	560	557	205	0	655	141	707	340	83	628	289
V/C Ratio(X)	0.84	0.29	0.14	1.62	0.00	0.95	1.38	0.34	0.37	0.83	0.46	0.50
Avail Cap(c_a), veh/h	109	595	593	205	0	689	141	1197	577	143	1259	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	18.7	17.6	35.5	0.0	22.1	38.0	27.8	28.0	38.6	30.0	30.2
Incr Delay (d2), s/veh	40.3	0.1	0.0	300.5	0.0	21.9	209.6	0.5	1.2	8.0	1.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.1	1.0	21.2	0.0	14.6	11.0	2.0	2.2	1.5	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.7	18.8	17.7	336.0	0.0	44.0	247.6	28.4	29.2	46.6	30.9	32.6
LnGrp LOS	E	B	B	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		333			954			563			506	
Approach Delay, s/veh		35.1			145.9			104.5			33.6	
Approach LOS		D			F			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	22.6	16.0	35.0	11.0	20.7	9.5	41.5
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	5.9	7.5	13.6	8.1	8.6	9.0	6.3	35.3
Green Ext Time (p_c), s	0.0	3.9	0.0	0.7	0.0	4.6	0.0	1.3

Intersection Summary		
HCM 6th Ctrl Delay		96.2
HCM 6th LOS		F

34: Pacific Hwy & Laurel St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	850	60	60	1010	80	170	270	70	90	180	620
Future Volume (veh/h)	350	850	60	60	1010	80	170	270	70	90	180	620
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	357	867	61	61	1031	82	173	276	71	92	184	633
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	378	1649	116	78	1070	85	134	1046	254	113	1253	713
Arrive On Green	0.21	0.49	0.49	0.04	0.32	0.32	0.08	0.26	0.26	0.06	0.25	0.25
Sat Flow, veh/h	1767	3335	235	1767	3300	262	1767	4038	980	1767	5066	1521
Grp Volume(v), veh/h	357	458	470	61	551	562	173	228	119	92	184	633
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1799	1767	1689	1641	1767	1689	1521
Q Serve(g_s), s	27.9	24.9	24.9	4.8	43.0	43.0	10.6	7.5	8.1	7.2	4.0	34.6
Cycle Q Clear(g_c), s	27.9	24.9	24.9	4.8	43.0	43.0	10.6	7.5	8.1	7.2	4.0	34.6
Prop In Lane	1.00		0.13	1.00		0.15	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	378	871	893	78	572	584	134	875	425	113	1253	713
V/C Ratio(X)	0.94	0.53	0.53	0.78	0.96	0.96	1.29	0.26	0.28	0.81	0.15	0.89
Avail Cap(c_a), veh/h	386	871	893	121	575	587	134	875	425	172	1253	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	24.2	24.2	66.3	46.5	46.5	64.7	41.2	41.4	64.7	41.1	34.7
Incr Delay (d2), s/veh	31.5	0.8	0.8	6.8	28.1	27.9	176.2	0.7	1.6	9.1	0.2	15.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	10.6	10.8	2.3	23.2	23.6	11.3	3.3	3.5	3.5	1.7	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.7	25.0	25.0	73.1	74.6	74.4	240.9	41.9	43.1	73.8	41.4	50.0
LnGrp LOS	F	C	C	E	E	E	F	D	D	E	D	D
Approach Vol, veh/h		1285			1174			520			909	
Approach Delay, s/veh		41.9			74.4			108.4			50.7	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	41.6	10.6	74.5	15.0	39.9	34.4	50.7
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	9.2	10.1	6.8	26.9	12.6	36.6	29.9	45.0
Green Ext Time (p_c), s	0.0	2.6	0.0	11.7	0.0	0.0	0.1	0.4

Intersection Summary		
HCM 6th Ctrl Delay		62.6
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

35: Harbor Dr & Laurel St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1040	1950	2260	60	50	70
Future Volume (veh/h)	1040	1950	2260	60	50	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1118	2097	2430	0	54	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4289	2868		114	101
Arrive On Green	0.24	0.85	0.57	0.00	0.06	0.06
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1118	2097	2430	0	54	75
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	12.8	47.2	0.0	3.5	5.5
Cycle Q Clear(g_c), s	28.7	12.8	47.2	0.0	3.5	5.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4289	2868		114	101
V/C Ratio(X)	1.34	0.49	0.85		0.47	0.74
Avail Cap(c_a), veh/h	834	4289	2868		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	2.4	21.3	0.0	53.3	54.2
Incr Delay (d2), s/veh	161.4	0.4	3.3	0.0	1.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.8	2.7	18.5	0.0	1.6	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	206.1	2.8	24.7	0.0	54.4	58.2
LnGrp LOS	F	A	C		D	E
Approach Vol, veh/h		3215	2430	A	129	
Approach Delay, s/veh		73.5	24.7		56.6	
Approach LOS		E	C		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		105.2		12.8	33.1	72.1
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		14.8		7.5	30.7	49.2
Green Ext Time (p_c), s		58.3		0.2	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		52.6
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

36: SeaWorld Dr & E Mission Bay Dr/Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	50	100	70	120	90	240	1070	60	150	730	200
Future Volume (veh/h)	80	50	100	70	120	90	240	1070	60	150	730	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	83	52	104	73	125	94	250	1115	62	156	760	208
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	217	173	93	225	177	354	1412	78	197	1497	742
Arrive On Green	0.05	0.12	0.12	0.05	0.12	0.12	0.10	0.42	0.42	0.11	0.42	0.42
Sat Flow, veh/h	3428	1856	1478	1767	1856	1458	3428	3391	188	1767	3526	1570
Grp Volume(v), veh/h	83	52	104	73	125	94	250	579	598	156	760	208
Grp Sat Flow(s),veh/h/ln	1714	1856	1478	1767	1856	1458	1714	1763	1817	1767	1763	1570
Q Serve(g_s), s	1.5	1.6	4.3	2.6	4.1	3.9	4.6	18.5	18.5	5.6	10.2	5.2
Cycle Q Clear(g_c), s	1.5	1.6	4.3	2.6	4.1	3.9	4.6	18.5	18.5	5.6	10.2	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	164	217	173	93	225	177	354	734	756	197	1497	742
V/C Ratio(X)	0.51	0.24	0.60	0.79	0.55	0.53	0.71	0.79	0.79	0.79	0.51	0.28
Avail Cap(c_a), veh/h	254	889	708	109	854	671	588	811	836	437	1895	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	26.0	27.1	30.3	26.8	26.7	28.1	16.4	16.4	28.0	13.7	10.4
Incr Delay (d2), s/veh	0.9	0.6	3.3	22.8	0.8	0.9	1.0	5.5	5.4	2.7	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	1.5	1.6	1.7	1.3	1.8	7.3	7.5	2.3	3.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	26.5	30.5	53.1	27.6	27.6	29.0	21.9	21.8	30.7	14.1	10.7
LnGrp LOS	C	C	C	D	C	C	C	C	C	C	B	B
Approach Vol, veh/h		239			292			1427			1124	
Approach Delay, s/veh		29.8			34.0			23.1			15.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	32.2	7.8	13.1	11.1	32.8	7.5	13.4
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	17.6	20.5	4.6	6.3	6.6	12.2	3.5	6.1
Green Ext Time (p_c), s	0.1	6.4	0.0	0.6	0.2	8.8	0.0	0.5

Intersection Summary			
HCM 6th Ctrl Delay			22.0
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Year 2030 AM | Old Town Complex

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑					↰		↱
Traffic Volume (veh/h)	0	1140	70	300	320	0	0	0	0	180	0	720
Future Volume (veh/h)	0	1140	70	300	320	0	0	0	0	180	0	720
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1239	76	326	348	0				196	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1414	618	929	2605	0				235	0	
Arrive On Green	0.00	0.40	0.40	0.54	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1239	76	326	348	0				196	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	24.3	2.3	4.0	0.0	0.0				8.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.3	2.3	4.0	0.0	0.0				8.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1414	618	929	2605	0				235	0	
V/C Ratio(X)	0.00	0.88	0.12	0.35	0.13	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	1608	702	929	2605	0				372	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.50	0.50	0.76	0.76	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.7	14.1	13.4	0.0	0.0				31.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.2	0.2	0.2	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.5	0.8	1.3	0.0	0.0				3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.9	14.4	13.6	0.1	0.0				36.3	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1315			674						196	A
Approach Delay, s/veh		24.3			6.6						36.3	
Approach LOS		C			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	25.3	35.1		14.6		60.4						
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0						
Max Green Setting (Gmax), s	11.3	* 34		15.8		49.6						
Max Q Clear Time (g_c+I1), s	6.0	26.3		10.1		2.0						
Green Ext Time (p_c), s	0.5	3.7		0.0		1.5						
Intersection Summary												
HCM 6th Ctrl Delay			19.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Year 2030 AM | Old Town Complex

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↱			↰	↱			
Traffic Volume (veh/h)	840	480	0	0	420	270	260	10	380	0	0	0
Future Volume (veh/h)	840	480	0	0	420	270	260	10	380	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	875	500	0	0	438	281	271	10	396			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1093	2299	0	0	527	335	364	13	335			
Arrive On Green	0.53	1.00	0.00	0.00	0.26	0.26	0.21	0.21	0.21			
Sat Flow, veh/h	3428	3618	0	0	2120	1288	1707	63	1572			
Grp Volume(v), veh/h	875	500	0	0	380	339	281	0	396			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1552	1770	0	1572			
Q Serve(g_s), s	15.6	0.0	0.0	0.0	15.3	15.5	11.1	0.0	16.0			
Cycle Q Clear(g_c), s	15.6	0.0	0.0	0.0	15.3	15.5	11.1	0.0	16.0			
Prop In Lane	1.00		0.00	0.00		0.83	0.96		1.00			
Lane Grp Cap(c), veh/h	1093	2299	0	0	458	403	378	0	335			
V/C Ratio(X)	0.80	0.22	0.00	0.00	0.83	0.84	0.74	0.00	1.18			
Avail Cap(c_a), veh/h	1093	2299	0	0	541	476	378	0	335			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.52	0.52	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.6	0.0	0.0	0.0	26.2	26.3	27.6	0.0	29.5			
Incr Delay (d2), s/veh	2.3	0.1	0.0	0.0	15.9	18.6	6.9	0.0	107.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	0.0	8.0	7.4	5.2	0.0	22.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.1	0.0	0.0	42.1	44.8	34.5	0.0	137.2			
LnGrp LOS	B	A	A	A	D	D	C	A	F			
Approach Vol, veh/h		1375			719			677				
Approach Delay, s/veh		11.4			43.4			94.6				
Approach LOS		B			D			F				
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		54.4		20.6	29.4	25.0						
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5						
Max Green Setting (Gmax), s		48.9		16.0	21.8	* 23						
Max Q Clear Time (g_c+I1), s		2.0		18.0	17.6	17.5						
Green Ext Time (p_c), s		2.3		0.0	1.5	1.6						
Intersection Summary												
HCM 6th Ctrl Delay			40.0									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	710	10	1070	980	0	390
Future Volume (veh/h)	710	10	1070	980	0	390
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	773	0	1151	0	0	419
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	914	416	1704		0	1704
Arrive On Green	0.26	0.00	0.48	0.00	0.00	0.48
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	773	0	1151	0	0	419
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	11.4	0.0	13.8	0.0	0.0	3.8
Cycle Q Clear(g_c), s	11.4	0.0	13.8	0.0	0.0	3.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	914	416	1704		0	1704
V/C Ratio(X)	0.85	0.00	0.68		0.00	0.25
Avail Cap(c_a), veh/h	983	448	1704		0	1704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	10.9	0.0	0.0	8.3
Incr Delay (d2), s/veh	6.8	0.0	2.2	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	4.8	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.1	0.0	13.1	0.0	0.0	8.7
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	773		1151	A		419
Approach Delay, s/veh	26.1		13.1			8.7
Approach LOS	C		B			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	32.1	32.1	22.9
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	25.5	* 26	15.3
Max Q Clear Time (g_c+I1), s	15.8	5.8	13.4
Green Ext Time (p_c), s	6.5	4.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	260	480	80	80	240	560
Future Volume (vph)	260	480	80	80	240	560
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	289	533	89	89	267	622

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	289	533	178	267	622
Volume Left (vph)	289	0	0	267	0
Volume Right (vph)	0	0	89	0	622
Hadj (s)	0.55	0.05	-0.25	0.25	-0.55
Departure Headway (s)	6.2	5.7	5.6	6.2	3.2
Degree Utilization, x	0.50	0.84	0.28	0.46	0.55
Capacity (veh/h)	573	623	611	557	1117
Control Delay (s)	14.0	30.8	10.7	14.5	10.1
Approach Delay (s)	24.9		10.7	11.4	
Approach LOS	C		B	B	

Intersection Summary			
Delay	17.2		
Level of Service	C		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	700	500	420	220	240	30
Future Volume (veh/h)	700	500	420	220	240	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	753	538	452	0	258	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	794	1349	780		362	873
Arrive On Green	0.45	0.73	0.22	0.00	0.11	0.11
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	753	538	452	0	258	32
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	30.5	8.3	8.5	0.0	5.4	0.7
Cycle Q Clear(g_c), s	30.5	8.3	8.5	0.0	5.4	0.7
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	794	1349	780		362	873
V/C Ratio(X)	0.95	0.40	0.58		0.71	0.04
Avail Cap(c_a), veh/h	966	1877	1441		1011	1170
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	3.9	26.0	0.0	32.3	7.5
Incr Delay (d2), s/veh	15.0	0.1	0.3	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	2.1	3.5	0.0	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	4.0	26.2	0.0	33.3	7.5
LnGrp LOS	C	A	C		C	A
Approach Vol, veh/h		1291	452	A	290	
Approach Delay, s/veh		21.9	26.2		30.4	
Approach LOS		C	C		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		60.3		14.4	37.7	22.5
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		10.3		7.4	32.5	10.5
Green Ext Time (p_c), s		2.5		0.5	1.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	20	370	0	0	10	550	870	0	10	290	80
Future Volume (veh/h)	290	20	370	0	0	10	550	870	0	10	290	80
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		1.00	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	338	0	411				611	967	0	11	322	89
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	731	0	1005				1523	2187	0	19	488	132
Arrive On Green	0.21	0.00	0.21				0.89	1.00	0.00	0.01	0.18	0.18
Sat Flow, veh/h	3534	0	1480				3428	3618	0	1767	2697	729
Grp Volume(v), veh/h	338	0	411				611	967	0	11	208	203
Grp Sat Flow(s),veh/h/ln	1767	0	1480				1714	1763	0	1767	1763	1663
Q Serve(g_s), s	7.5	0.0	0.0				2.8	0.0	0.0	0.6	9.9	10.3
Cycle Q Clear(g_c), s	7.5	0.0	0.0				2.8	0.0	0.0	0.6	9.9	10.3
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	731	0	1005				1523	2187	0	19	319	301
V/C Ratio(X)	0.46	0.00	0.41				0.40	0.44	0.00	0.58	0.65	0.67
Avail Cap(c_a), veh/h	1178	0	1192				1523	2187	0	100	460	434
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.73	0.73	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	0.0	7.4				2.9	0.0	0.0	44.3	34.2	34.4
Incr Delay (d2), s/veh	0.8	0.0	0.4				0.0	0.5	0.0	10.1	9.9	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	10.4				0.7	0.1	0.0	0.3	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	7.9				3.0	0.5	0.0	54.4	44.1	45.9
LnGrp LOS	C	A	A				A	A	A	D	D	D
Approach Vol, veh/h		749						1578			422	
Approach Delay, s/veh		18.8						1.4			45.3	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2		4	5	6		
Phs Duration (G+Y+Rc), s	5.4	60.7		23.9	44.9	21.2		
Change Period (Y+Rc), s	4.4	4.9		5.3	4.9	* 4.9		
Max Green Setting (Gmax), s	5.1	40.3		30.0	21.9	* 24		
Max Q Clear Time (g_c+I1), s	2.6	2.0		9.5	4.8	12.3		
Green Ext Time (p_c), s	0.0	9.7		5.2	1.2	2.4		

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	70	10	250	10	1140	90	220	480	10
Future Volume (veh/h)	10	10	10	70	10	250	10	1140	90	220	480	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.95	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	73	10	260	10	1188	94	229	500	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	143	141	115	117	30	309	17	1420	112	469	1977	39
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.01	0.30	0.30	0.27	0.56	0.56
Sat Flow, veh/h	330	516	423	250	111	1132	1767	4756	376	1767	3532	71
Grp Volume(v), veh/h	30	0	0	343	0	0	10	843	439	229	249	261
Grp Sat Flow(s),veh/h/ln	1269	0	0	1494	0	0	1767	1689	1755	1767	1763	1839
Q Serve(g_s), s	0.0	0.0	0.0	14.4	0.0	0.0	0.5	21.0	21.0	9.8	6.5	6.5
Cycle Q Clear(g_c), s	1.2	0.0	0.0	19.4	0.0	0.0	0.5	21.0	21.0	9.8	6.5	6.5
Prop In Lane	0.33		0.33	0.21		0.76	1.00		0.21	1.00		0.04
Lane Grp Cap(c), veh/h	399	0	0	456	0	0	17	1009	524	469	987	1030
V/C Ratio(X)	0.08	0.00	0.00	0.75	0.00	0.00	0.58	0.84	0.84	0.49	0.25	0.25
Avail Cap(c_a), veh/h	487	0	0	547	0	0	102	1054	548	469	987	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.67	0.67	0.67	0.92	0.92	0.92
Uniform Delay (d), s/veh	24.2	0.0	0.0	30.8	0.0	0.0	44.4	29.5	29.5	27.9	10.2	10.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.7	0.0	0.0	7.3	5.7	10.4	0.3	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	7.3	0.0	0.0	0.3	9.0	10.1	4.1	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	0.0	34.4	0.0	0.0	51.6	35.2	39.9	28.2	10.7	10.7
LnGrp LOS	C	A	A	C	A	A	D	D	D	C	B	B
Approach Vol, veh/h		30			343			1292			739	
Approach Delay, s/veh		24.3			34.4			36.9			16.1	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.8	31.8		29.4	5.3	55.3		29.4
Change Period (Y+Rc), s	4.9	* 4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s	17.6	* 28		30.1	5.2	40.5		30.1
Max Q Clear Time (g_c+I1), s	11.8	23.0		3.2	2.5	8.5		21.4
Green Ext Time (p_c), s	0.2	3.8		0.1	0.0	4.5		1.0

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	130	160	460	0	150	0	250	0	0	0
Future Volume (veh/h)	0	990	130	160	460	0	150	0	250	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.92		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1031	135	167	479	0	156	0	260	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1460	191	183	1674	0	411	0	331	0	401	0
Arrive On Green	0.00	0.42	0.42	0.10	0.60	0.00	0.22	0.00	0.22	0.00	0.00	0.00
Sat Flow, veh/h	0	3625	456	1767	2849	0	1287	0	1534	0	1856	0
Grp Volume(v), veh/h	0	784	382	167	479	0	156	0	260	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1290	1767	1388	0	1287	0	1534	0	1856	0
Q Serve(g_s), s	0.0	13.2	13.3	5.1	4.5	0.0	5.9	0.0	8.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.2	13.3	5.1	4.5	0.0	5.9	0.0	8.7	0.0	0.0	0.0
Prop In Lane	0.00		0.35	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1112	539	183	1674	0	411	0	331	0	401	0
V/C Ratio(X)	0.00	0.71	0.71	0.91	0.29	0.00	0.38	0.00	0.78	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1233	598	183	1801	0	849	0	853	0	1063	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.0	13.0	24.0	5.2	0.0	18.9	0.0	20.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.6	3.4	41.9	0.0	0.0	0.2	0.0	1.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	3.7	4.1	0.9	0.0	1.6	0.0	2.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.6	16.4	65.9	5.2	0.0	19.1	0.0	21.6	0.0	0.0	0.0
LnGrp LOS	A	B	B	E	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1166			646			416			0	
Approach Delay, s/veh		15.2			20.9			20.7			0.0	
Approach LOS		B			C			C				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	27.5	16.6	37.5	16.6
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	7.1	15.3	0.0	6.5	10.7
Green Ext Time (p_c), s	0.0	5.3	0.0	2.2	1.1

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	530	140	280	310	70	210	300	540	150	270	140
Future Volume (veh/h)	100	530	140	280	310	70	210	300	540	150	270	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	106	564	149	298	330	74	223	319	574	160	287	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	129	779	516	337	485	378	204	1012	483	174	1045	422
Arrive On Green	0.07	0.28	0.28	0.12	0.33	0.33	0.12	0.29	0.29	0.12	0.30	0.30
Sat Flow, veh/h	1767	2776	1191	2699	1461	1138	1767	3526	1144	1391	3526	1422
Grp Volume(v), veh/h	106	564	149	298	330	74	223	319	574	160	287	149
Grp Sat Flow(s),veh/h/ln	1767	1388	1191	1350	1461	1138	1767	1763	1144	1391	1763	1422
Q Serve(g_s), s	7.6	23.5	11.1	13.9	25.0	6.0	14.8	9.1	36.8	14.6	8.0	10.6
Cycle Q Clear(g_c), s	7.6	23.5	11.1	13.9	25.0	6.0	14.8	9.1	36.8	14.6	8.0	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	779	516	337	485	378	204	1012	483	174	1045	422
V/C Ratio(X)	0.82	0.72	0.29	0.88	0.68	0.20	1.09	0.32	1.19	0.92	0.27	0.35
Avail Cap(c_a), veh/h	163	791	521	364	485	378	204	1012	483	174	1045	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	41.6	26.7	55.2	36.9	30.6	56.7	35.8	38.1	55.5	34.5	35.4
Incr Delay (d2), s/veh	18.5	3.4	0.4	19.6	3.3	0.1	90.0	0.2	103.7	45.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	8.4	3.2	5.7	9.4	0.0	11.7	4.0	28.8	7.2	3.4	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	45.0	27.1	74.8	40.3	30.7	146.6	36.0	141.8	100.8	34.6	35.6
LnGrp LOS	E	D	C	E	D	C	F	D	F	F	C	D
Approach Vol, veh/h		819			702			1116			596	
Approach Delay, s/veh		45.9			53.9			112.5			52.6	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	41.8	20.2	44.7	14.8	48.5	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	15.9	25.5	16.8	12.6	9.6	27.0	16.6	38.8
Green Ext Time (p_c), s	0.1	3.9	0.0	1.3	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.9
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	40	130	710	460	190
Future Vol, veh/h	80	40	130	710	460	190
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	43	140	763	495	204

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1279	620	709	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	169	485	882	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	139	474	874	-	-	-
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	62.2	1.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	874	-	182	-	-
HCM Lane V/C Ratio	0.16	-	0.709	-	-
HCM Control Delay (s)	9.9	-	62.2	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.6	-	4.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	590	270	260	2040	0	0	2200	320
Future Volume (veh/h)	0	0	0	90	590	270	260	2040	0	0	2200	320
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				108	711	325	313	2458	0	0	2651	386
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				86	579	283	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				312	2106	1029	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				636	0	508	313	2458	0	0	2651	386
Grp Sat Flow(s),veh/h/ln				1840	0	1607	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	78.8	24.5
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	78.8	24.5
Prop In Lane				0.17		0.64	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				506	0	442	150	3362	0	0	2792	836
V/C Ratio(X)				1.26	0.00	1.15	2.08	0.73	0.00	0.00	0.95	0.46
Avail Cap(c_a), veh/h				506	0	442	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	33.8	21.6
Incr Delay (d2), s/veh				131.2	0.0	90.3	498.5	0.7	0.0	0.0	8.7	1.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				38.9	0.0	29.0	26.3	0.2	0.0	0.0	33.5	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				189.2	0.0	148.3	564.9	0.7	0.0	0.0	42.5	23.4
LnGrp LOS				F	A	F	F	A	A	A	D	C
Approach Vol, veh/h					1144			2771			3037	
Approach Delay, s/veh					171.1			64.4			40.1	
Approach LOS					F			E			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	111.1	48.9	18.0	93.1
Change Period (Y+Rc), s	4.9	4.9	4.4	4.9
Max Green Setting (Gmax), s	106.2	44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s	2.0	46.0	15.6	80.8
Green Ext Time (p_c), s	12.4	0.0	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	71.4
HCM 6th LOS	E

9: Camino Del Rio W & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	460	250	180	0	0	0	0	2060	30	180	2010	0
Future Volume (veh/h)	460	250	180	0	0	0	0	2060	30	180	2010	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	366	409	186				0	2124	31	186	2072	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	457	480	381				0	2815	41	186	4340	0
Arrive On Green	0.26	0.26	0.26				0.00	0.55	0.55	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1472				0	5309	75	1767	6643	0
Grp Volume(v), veh/h	366	409	186				0	1394	761	186	2072	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1472				0	1689	1840	1767	1596	0
Q Serve(g_s), s	31.0	33.5	17.2				0.0	50.9	51.1	16.8	0.0	0.0
Cycle Q Clear(g_c), s	31.0	33.5	17.2				0.0	50.9	51.1	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	457	480	381				0	1849	1007	186	4340	0
V/C Ratio(X)	0.80	0.85	0.49				0.00	0.75	0.76	1.00	0.48	0.00
Avail Cap(c_a), veh/h	520	546	433				0	1849	1007	186	4340	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.29	0.29	0.19	0.19	0.00
Uniform Delay (d), s/veh	55.4	56.4	50.3				0.0	27.9	27.9	63.2	0.0	0.0
Incr Delay (d2), s/veh	6.7	10.0	0.4				0.0	0.9	1.6	29.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	17.1	6.4				0.0	20.4	22.5	8.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	66.4	50.7				0.0	28.8	29.5	92.6	0.1	0.0
LnGrp LOS	E	E	D				A	C	C	F	A	A
Approach Vol, veh/h		961						2155			2258	
Approach Delay, s/veh		61.7						29.0			7.7	
Approach LOS		E						C			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	21.2	92.5	46.3	113.7
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	16.8	81.9	47.1	103.1
Max Q Clear Time (g_c+I1), s	18.8	53.1	35.5	2.0
Green Ext Time (p_c), s	0.0	7.1	1.0	8.5

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	320	20	270	0	200	0	690	250	80	540	0
Future Volume (veh/h)	130	320	20	270	0	200	0	690	250	80	540	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.87	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	137	337	21	284	0	211	0	726	263	84	568	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	372	361	23	0	0	0	0	1635	592	394	2567	0
Arrive On Green	0.21	0.21	0.21	0.00	0.00	0.00	0.00	0.67	0.67	0.03	0.73	0.00
Sat Flow, veh/h	1767	1716	107		0		0	2518	879	1767	3618	0
Grp Volume(v), veh/h	137	0	358		0.0		0	528	461	84	568	0
Grp Sat Flow(s),veh/h/ln	1767	0	1823				0	1763	1541	1767	1763	0
Q Serve(g_s), s	10.6	0.0	30.9				0.0	22.3	22.3	2.3	8.4	0.0
Cycle Q Clear(g_c), s	10.6	0.0	30.9				0.0	22.3	22.3	2.3	8.4	0.0
Prop In Lane	1.00		0.06				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	372	0	384				0	1189	1039	394	2567	0
V/C Ratio(X)	0.37	0.00	0.93				0.00	0.44	0.44	0.21	0.22	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1189	1039	426	2567	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38				0.00	0.26	0.26	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.0	0.0	62.0				0.0	12.1	12.1	9.1	7.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	13.5				0.0	0.3	0.4	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	15.8				0.0	8.8	7.7	0.9	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	0.0	75.6				0.0	12.4	12.5	9.2	7.2	0.0
LnGrp LOS	D	A	E				A	B	B	A	A	A
Approach Vol, veh/h		495						989			652	
Approach Delay, s/veh		69.7						12.4			7.5	
Approach LOS		E						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	8.6	112.8	38.6	121.4
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	7.1	65.6	36.1	77.1
Max Q Clear Time (g_c+I1), s	14.3	24.3	32.9	10.4
Green Ext Time (p_c), s	0.0	25.0	0.8	14.5

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	440	200	300	400	20	240	1590	440	0	1530	670
Future Volume (veh/h)	490	440	200	300	400	20	240	1590	440	0	1530	670
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	564	435	217	261	526	22	261	1728	478	0	1663	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	288	575	24	298	1949	524	0	1895	
Arrive On Green	0.23	0.23	0.23	0.05	0.05	0.05	0.17	0.99	0.99	0.00	0.37	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3533	148	3428	3940	1059	0	5233	1572
Grp Volume(v), veh/h	564	435	217	261	276	272	261	1474	732	0	1663	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1825	1714	1689	1621	0	1689	1572
Q Serve(g_s), s	23.3	37.1	21.0	23.5	23.7	23.8	11.9	5.8	7.8	0.0	48.9	0.0
Cycle Q Clear(g_c), s	23.3	37.1	21.0	23.5	23.7	23.8	11.9	5.8	7.8	0.0	48.9	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.65	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	288	302	297	298	1671	802	0	1895	
V/C Ratio(X)	0.69	1.01	0.63	0.91	0.91	0.92	0.88	0.88	0.91	0.00	0.88	
Avail Cap(c_a), veh/h	820	430	345	299	314	309	315	1671	802	0	1895	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	0.58	0.58	0.58	0.00	0.88	0.00
Uniform Delay (d), s/veh	56.2	61.5	55.3	74.5	74.6	74.6	65.3	0.5	0.5	0.0	46.6	0.0
Incr Delay (d2), s/veh	2.0	46.2	2.8	25.0	25.2	26.1	13.7	4.3	10.7	0.0	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	23.0	8.2	13.3	14.0	13.9	5.3	1.3	2.7	0.0	21.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.2	107.6	58.0	99.5	99.8	100.7	79.0	4.8	11.1	0.0	52.1	0.0
LnGrp LOS	E	F	E	F	F	F	E	A	B	A	D	
Approach Vol, veh/h		1216			809			2467			1663	A
Approach Delay, s/veh		75.9			100.0			14.5			52.1	
Approach LOS		E			F			B			D	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		85.1		43.0	19.3	65.8		31.9
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		9.8		39.1	13.9	50.9		25.8
Green Ext Time (p_c), s		8.6		0.0	0.0	3.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	400	150	140	560	260	210	1560	90	340	1140	130
Future Volume (veh/h)	290	400	150	140	560	260	210	1560	90	340	1140	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	309	426	160	149	596	277	223	1660	96	362	1213	138
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	350	525	223	243	662	279	264	1785	103	757	2356	268
Arrive On Green	0.10	0.15	0.15	0.14	0.19	0.19	0.08	0.36	0.36	0.44	1.00	1.00
Sat Flow, veh/h	3428	3526	1498	1767	3526	1487	3428	4890	283	3428	4601	523
Grp Volume(v), veh/h	309	426	160	149	596	277	223	1146	610	362	890	461
Grp Sat Flow(s),veh/h/ln	1714	1763	1498	1767	1763	1487	1714	1689	1796	1714	1689	1747
Q Serve(g_s), s	14.2	18.7	13.7	12.7	26.4	19.2	10.3	52.2	52.3	12.0	0.0	0.0
Cycle Q Clear(g_c), s	14.2	18.7	13.7	12.7	26.4	19.2	10.3	52.2	52.3	12.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.30
Lane Grp Cap(c), veh/h	350	525	223	243	662	279	264	1233	655	757	1729	895
V/C Ratio(X)	0.88	0.81	0.72	0.61	0.90	0.99	0.84	0.93	0.93	0.48	0.51	0.52
Avail Cap(c_a), veh/h	420	729	310	243	734	309	334	1391	740	757	1729	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	0.43	0.43	0.43
Uniform Delay (d), s/veh	70.9	65.9	45.9	65.0	63.5	27.1	72.9	48.8	48.9	38.1	0.0	0.0
Incr Delay (d2), s/veh	15.4	3.3	2.2	3.3	12.6	46.6	8.7	10.0	16.5	0.1	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	8.7	5.3	6.0	13.1	10.6	4.8	23.5	26.2	4.4	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.3	69.2	48.1	68.3	76.1	73.7	81.5	58.8	65.3	38.2	0.5	0.9
LnGrp LOS	F	E	D	E	E	E	F	E	E	D	A	A
Approach Vol, veh/h		895			1022			1979			1713	
Approach Delay, s/veh		71.4			74.3			63.4			8.6	
Approach LOS		E			E			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.0	63.3	26.9	28.7	16.7	87.6	20.7	34.9
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	14.0	54.3	14.7	20.7	12.3	2.0	16.2	28.4
Green Ext Time (p_c), s	0.2	4.1	0.0	1.0	0.1	3.7	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	280	20	460	360	120	30	1470	630	150	1170	330
Future Volume (veh/h)	220	280	20	460	360	120	30	1470	630	150	1170	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	229	292	21	479	375	125	31	1531	656	156	1219	344
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	249	353	25	521	399	326	41	2339	709	199	1750	751
Arrive On Green	0.14	0.21	0.21	0.15	0.22	0.22	0.02	0.46	0.46	0.02	0.16	0.16
Sat Flow, veh/h	1767	1705	123	3428	1856	1516	1767	5066	1536	3428	3526	1514
Grp Volume(v), veh/h	229	0	313	479	375	125	31	1531	656	156	1219	344
Grp Sat Flow(s),veh/h/ln	1767	0	1828	1714	1856	1516	1767	1689	1536	1714	1763	1514
Q Serve(g_s), s	20.5	0.0	26.2	22.0	31.8	9.6	2.8	37.3	64.2	7.3	52.2	19.4
Cycle Q Clear(g_c), s	20.5	0.0	26.2	22.0	31.8	9.6	2.8	37.3	64.2	7.3	52.2	19.4
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	0	379	521	399	326	41	2339	709	199	1750	751
V/C Ratio(X)	0.92	0.00	0.83	0.92	0.94	0.38	0.75	0.65	0.92	0.79	0.70	0.46
Avail Cap(c_a), veh/h	316	0	444	660	477	389	62	2339	709	249	1750	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	67.9	0.0	60.7	66.9	61.8	39.0	77.7	33.2	40.4	77.5	55.5	16.5
Incr Delay (d2), s/veh	24.5	0.0	9.2	10.5	17.8	0.2	9.9	1.4	19.7	7.9	1.9	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.0	13.2	10.4	17.0	3.7	1.4	15.5	28.0	3.5	25.3	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.4	0.0	69.9	77.4	79.5	39.2	87.6	34.7	60.2	85.4	57.4	18.1
LnGrp LOS	F	A	E	E	E	D	F	C	E	F	E	B
Approach Vol, veh/h		542			979			2218			1719	
Approach Delay, s/veh		79.4			73.3			42.9			52.1	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	79.6	28.7	38.0	8.1	85.1	27.4	39.3
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.3	66.2	24.0	28.2	4.8	54.2	22.5	33.8
Green Ext Time (p_c), s	0.0	0.0	0.3	0.5	0.0	3.1	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	870	170	400	810	130	400
Future Volume (veh/h)	870	170	400	810	130	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	956	187	440	890	143	440
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	979	191	432	2173	112	345
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3007	569	1767	3618	386	1188
Grp Volume(v), veh/h	578	565	440	890	584	0
Grp Sat Flow(s),veh/h/ln	1763	1721	1767	1763	1577	0
Q Serve(g_s), s	35.8	35.9	27.0	14.3	32.1	0.0
Cycle Q Clear(g_c), s	35.8	35.9	27.0	14.3	32.1	0.0
Prop In Lane		0.33	1.00		0.24	0.75
Lane Grp Cap(c), veh/h	592	578	432	2173	458	0
V/C Ratio(X)	0.98	0.98	1.02	0.41	1.28	0.00
Avail Cap(c_a), veh/h	592	578	432	2173	458	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.3	36.3	41.8	10.9	39.2	0.0
Incr Delay (d2), s/veh	30.9	31.9	48.2	0.1	139.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.1	19.8	17.4	5.3	30.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.2	68.2	90.0	11.0	179.1	0.0
LnGrp LOS	E	E	F	B	F	A
Approach Vol, veh/h	1143			1330	584	
Approach Delay, s/veh	67.7			37.1	179.1	
Approach LOS	E			D	F	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	31.0	42.5	73.5	37.0
Change Period (Y+Rc), s	4.0	* 5.4	5.4	4.9
Max Green Setting (Gmax), s	27.0	* 37	67.6	32.1
Max Q Clear Time (g_c+I1), s	29.0	37.9	16.3	34.1
Green Ext Time (p_c), s	0.0	0.0	8.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	240	730	20	0	830
Future Vol, veh/h	0	240	730	20	0	830
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	247	753	21	0	856

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	407	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	591	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	580	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	580	-
HCM Lane V/C Ratio	-	-	0.427	-
HCM Control Delay (s)	-	-	15.7	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	2.1	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1160	1200	740	750	70
Future Volume (veh/h)	0	1160	1200	740	750	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1196	1237	763	773	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1710	1710	1191	996	
Arrive On Green	0.00	0.49	0.49	0.49	0.29	0.00
Sat Flow, veh/h	0	3711	3618	1513	3428	1572
Grp Volume(v), veh/h	0	1196	1237	763	773	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1513	1714	1572
Q Serve(g_s), s	0.0	12.5	13.1	10.8	9.8	0.0
Cycle Q Clear(g_c), s	0.0	12.5	13.1	10.8	9.8	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1710	1710	1191	996	
V/C Ratio(X)	0.00	0.70	0.72	0.64	0.78	
Avail Cap(c_a), veh/h	0	1896	1896	1271	1742	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.5	9.6	2.4	15.3	0.0
Incr Delay (d2), s/veh	0.0	1.0	1.2	1.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	4.0	6.3	3.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	10.5	10.9	3.4	16.3	0.0
LnGrp LOS	A	B	B	A	B	
Approach Vol, veh/h		1196	2000		773	A
Approach Delay, s/veh		10.5	8.0		16.3	
Approach LOS		B	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		28.3		18.9		28.3
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		14.5		11.8		15.1
Green Ext Time (p_c), s		6.0		2.0		7.8

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

17: Pacific Hwy & Old Town Transit Ctr Drwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	80	80	0	60	60	750	30	50	550	50
Future Volume (veh/h)	60	0	80	80	0	60	60	750	30	50	550	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	0	91	91	0	68	68	852	34	57	625	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	38	181	501	0	324	94	1807	72	83	1676	151
Arrive On Green	0.21	0.00	0.21	0.21	0.00	0.21	0.05	0.36	0.36	0.05	0.36	0.36
Sat Flow, veh/h	454	177	845	1283	0	1516	1767	4988	199	1767	4708	425
Grp Volume(v), veh/h	159	0	0	91	0	68	68	576	310	57	446	236
Grp Sat Flow(s),veh/h/ln	1476	0	0	1283	0	1516	1767	1689	1809	1767	1689	1756
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	1.4	1.5	5.1	5.1	1.2	3.8	3.9
Cycle Q Clear(g_c), s	3.5	0.0	0.0	1.7	0.0	1.4	1.5	5.1	5.1	1.2	3.8	3.9
Prop In Lane	0.43		0.57	1.00		1.00	1.00		0.11	1.00		0.24
Lane Grp Cap(c), veh/h	448	0	0	501	0	324	94	1223	655	83	1202	625
V/C Ratio(X)	0.36	0.00	0.00	0.18	0.00	0.21	0.72	0.47	0.47	0.68	0.37	0.38
Avail Cap(c_a), veh/h	1311	0	0	1281	0	1247	244	1868	1001	303	1972	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	0.0	12.7	0.0	12.6	18.2	9.6	9.6	18.3	9.3	9.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	3.8	0.4	0.7	3.6	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.5	0.0	0.4	0.6	1.5	1.6	0.5	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	0.0	12.8	0.0	12.7	22.0	10.0	10.3	21.9	9.6	9.8
LnGrp LOS	B	A	A	B	A	B	C	A	B	C	A	A
Approach Vol, veh/h		159			159			954			739	
Approach Delay, s/veh		13.6			12.8			10.9			10.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	19.5		13.3	6.5	19.3		13.3
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.2	7.1		5.5	3.5	5.9		3.7
Green Ext Time (p_c), s	0.0	6.3		0.6	0.0	4.7		0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

18: Pacific Hwy & Kurtz St

Intersection	
Int Delay, s/veh	29.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	530	320	610	710	20
Future Vol, veh/h	0	530	320	610	710	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	558	337	642	747	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	404	778	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 507	497	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 497	492	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	106.3	9.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	492	-	497	-	-
HCM Lane V/C Ratio	0.685	-	1.123	-	-
HCM Control Delay (s)	26.7	-	106.3	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	5.1	-	18.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	13.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	400	0	930	1110	110
Future Vol, veh/h	0	400	0	930	1110	110
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	412	0	959	1144	113

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	650	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 409	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 401	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	85.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	401	-	-
HCM Lane V/C Ratio	-	1.028	-	-
HCM Control Delay (s)	-	85.1	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	13.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	20	100	150	60	110	210	680	20	20	1400	90
Future Volume (veh/h)	140	20	100	150	60	110	210	680	20	20	1400	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	156	22	111	167	67	122	233	756	22	22	1556	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1629	699	29	1241	79
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.02	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3354	214
Grp Volume(v), veh/h	156	22	111	167	67	122	233	756	22	22	813	843
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1806
Q Serve(g_s), s	10.6	1.3	8.0	13.0	3.8	10.7	16.2	20.6	1.1	1.7	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	8.0	13.0	3.8	10.7	16.2	20.6	1.1	1.7	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1629	699	29	652	668
V/C Ratio(X)	1.17	0.05	0.29	0.87	0.13	0.34	1.14	0.46	0.03	0.76	1.25	1.26
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1629	699	72	652	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	42.8	61.5	37.8	40.3	61.9	25.8	20.5	68.6	44.1	44.1
Incr Delay (d2), s/veh	129.2	0.0	0.1	14.2	0.0	0.2	105.5	0.3	0.0	13.8	123.1	129.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.6	3.2	6.6	1.8	3.4	13.3	8.7	0.4	0.9	44.7	47.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.9	40.3	42.9	75.7	37.8	40.5	167.4	26.0	20.6	82.4	167.2	174.0
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	F	F
Approach Vol, veh/h		289			356			1011			1678	
Approach Delay, s/veh		124.2			56.5			58.5			169.5	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	73.4	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	3.7	22.6	15.0	10.0	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	7.9	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	119.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1531.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1980	1670	910	1500	150
Future Vol, veh/h	0	1980	1670	910	1500	150
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2200	1856	1011	1667	167

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	854	1844	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 300	~ 322	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 294	~ 319	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 2948.7	$ 1422.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 319	-	294	-	-
HCM Lane V/C Ratio	5.817	-	7.483	-	-
HCM Control Delay (s)	$ 2197.4	-	$ 2948.7	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	195.6	-	241.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	100	220	160	230	10	350	40	180	10	90	30
Future Volume (veh/h)	10	100	220	160	230	10	350	40	180	10	90	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.98		0.95	0.98		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	105	232	168	242	11	368	42	189	11	95	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	420	180	397	323	646	29	495	45	202	95	596	188
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1105	488	1079	1017	1757	80	852	97	438	59	1293	408
Grp Volume(v), veh/h	11	0	337	168	0	253	599	0	0	138	0	0
Grp Sat Flow(s),veh/h/ln	1105	0	1568	1017	0	1836	1387	0	0	1759	0	0
Q Serve(g_s), s	0.4	0.0	9.9	9.1	0.0	5.8	20.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	9.9	19.1	0.0	5.8	23.3	0.0	0.0	2.6	0.0	0.0
Prop In Lane	1.00		0.69	1.00		0.04	0.61		0.32	0.08		0.23
Lane Grp Cap(c), veh/h	420	0	576	323	0	675	741	0	0	880	0	0
V/C Ratio(X)	0.03	0.00	0.58	0.52	0.00	0.37	0.81	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	421	0	577	324	0	676	803	0	0	957	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	14.6	22.3	0.0	13.3	14.2	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.0	1.6	0.0	0.4	5.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.4	2.1	0.0	2.2	6.9	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	0.0	16.6	23.9	0.0	13.7	19.4	0.0	0.0	9.1	0.0	0.0
LnGrp LOS	B	A	B	C	A	B	B	A	A	A	A	A
Approach Vol, veh/h		348			421			599			138	
Approach Delay, s/veh		16.6			17.7			19.4			9.1	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.0	31.4	26.0	31.4
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.1	29.1	21.1	29.1
Max Q Clear Time (g_c+I1), s	11.9	4.6	21.1	25.3
Green Ext Time (p_c), s	2.2	0.5	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	10	20	60	130	220	400	390	40	0	380	190
Future Volume (veh/h)	0	10	20	60	130	220	400	390	40	0	380	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	11	22	65	141	239	435	424	43	0	413	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	131	262	94	134	205	459	1051	107	0	371	186
Arrive On Green	0.00	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	0	543	1086	175	557	849	1767	1651	167	0	1155	579
Grp Volume(v), veh/h	0	0	33	445	0	0	435	0	467	0	0	620
Grp Sat Flow(s),veh/h/ln	0	0	1630	1581	0	0	1767	0	1819	0	0	1735
Q Serve(g_s), s	0.0	0.0	1.3	14.8	0.0	0.0	19.3	0.0	10.1	0.0	0.0	25.7
Cycle Q Clear(g_c), s	0.0	0.0	1.3	19.3	0.0	0.0	19.3	0.0	10.1	0.0	0.0	25.7
Prop In Lane	0.00		0.67	0.15		0.54	1.00		0.09	0.00		0.33
Lane Grp Cap(c), veh/h	0	0	393	433	0	0	459	0	1157	0	0	557
V/C Ratio(X)	0.00	0.00	0.08	1.03	0.00	0.00	0.95	0.00	0.40	0.00	0.00	1.11
Avail Cap(c_a), veh/h	0	0	393	433	0	0	459	0	1157	0	0	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	23.5	31.4	0.0	0.0	29.1	0.0	7.1	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	50.5	0.0	0.0	28.6	0.0	0.1	0.0	0.0	72.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	14.4	0.0	0.0	11.5	0.0	3.3	0.0	0.0	21.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	23.5	81.9	0.0	0.0	57.7	0.0	7.2	0.0	0.0	100.0
LnGrp LOS	A	A	C	F	A	A	E	A	A	A	A	F
Approach Vol, veh/h		33			445			902			620	
Approach Delay, s/veh		23.5			81.9			31.5			100.0	
Approach LOS		C			F			C			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3
Max Q Clear Time (g_c+I1), s		12.1		3.3	21.3	27.7		21.3
Green Ext Time (p_c), s		2.1		0.1	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	63.9
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	29.1
Intersection LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	410	280	0	420	170	0
Future Vol, veh/h	410	280	0	420	170	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	456	311	0	467	189	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	32.5	29.8	13.5
HCM LOS	D	D	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	410	280	170
LT Vol	0	410	0	0
Through Vol	420	0	0	170
RT Vol	0	0	280	0
Lane Flow Rate	467	456	311	189
Geometry Grp	2	7	7	2
Degree of Util (X)	0.802	0.895	0.506	0.354
Departure Headway (Hd)	6.19	7.076	5.855	6.741
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	583	510	613	531
Service Time	4.246	4.835	3.614	4.812
HCM Lane V/C Ratio	0.801	0.894	0.507	0.356
HCM Control Delay	29.8	44.8	14.5	13.5
HCM Lane LOS	D	E	B	B
HCM 95th-tile Q	7.8	10.1	2.9	1.6

Intersection	
Intersection Delay, s/veh	27.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	270	230	40	80	20	390	0	160	10	0	0
Future Vol, veh/h	10	270	230	40	80	20	390	0	160	10	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	284	242	42	84	21	411	0	168	11	0	0
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	15.2	12.3	42.3	10.5
HCM LOS	C	B	E	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	71%	4%	0%	29%	100%
Vol Thru, %	0%	96%	0%	57%	0%
Vol Right, %	29%	0%	100%	14%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	550	280	230	140	10
LT Vol	390	10	0	40	10
Through Vol	0	270	0	80	0
RT Vol	160	0	230	20	0
Lane Flow Rate	579	295	242	147	11
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.917	0.546	0.399	0.274	0.021
Departure Headway (Hd)	5.704	6.669	5.937	6.693	7.322
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	631	539	603	533	492
Service Time	3.759	4.443	3.711	4.782	5.322
HCM Lane V/C Ratio	0.918	0.547	0.401	0.276	0.022
HCM Control Delay	42.3	17.3	12.6	12.3	10.5
HCM Lane LOS	E	C	B	B	B
HCM 95th-tile Q	11.8	3.3	1.9	1.1	0.1

Intersection	
Intersection Delay, s/veh	46.1
Intersection LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	50	150	490	120	150
Future Vol, veh/h	60	50	150	490	120	150
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	61	183	598	146	183
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.9	66.5	12.2
HCM LOS	B	F	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	23%	100%	0%	0%
Vol Thru, %	77%	0%	0%	44%
Vol Right, %	0%	0%	100%	56%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	640	60	50	270
LT Vol	150	60	0	0
Through Vol	490	0	0	120
RT Vol	0	0	50	150
Lane Flow Rate	780	73	61	329
Geometry Grp	2	7	7	2
Degree of Util (X)	1.043	0.152	0.106	0.453
Departure Headway (Hd)	4.81	7.677	6.449	5.067
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	470	559	715
Service Time	2.897	5.377	4.149	3.067
HCM Lane V/C Ratio	1.041	0.155	0.109	0.46
HCM Control Delay	66.5	11.7	9.9	12.2
HCM Lane LOS	F	B	A	B
HCM 95th-tile Q	19	0.5	0.4	2.4

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	280	0	360	180	40	130	0
Future Vol, veh/h	0	0	0	10	0	280	0	360	180	40	130	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	0	333	0	429	214	48	155	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	13.8	17.2	11.9
HCM LOS	-	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	3%	24%
Vol Thru, %	100%	0%	100%	0%	76%
Vol Right, %	0%	100%	0%	97%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	180	0	290	170
LT Vol	0	0	0	10	40
Through Vol	360	0	0	0	130
RT Vol	0	180	0	280	0
Lane Flow Rate	429	214	0	345	202
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.695	0.305	0	0.511	0.332
Departure Headway (Hd)	5.834	5.125	6.693	5.325	5.901
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	621	701	0	677	609
Service Time	3.568	2.858	4.763	3.365	3.943
HCM Lane V/C Ratio	0.691	0.305	0	0.51	0.332
HCM Control Delay	20.8	10.1	9.8	13.8	11.9
HCM Lane LOS	C	B	N	B	B
HCM 95th-tile Q	5.5	1.3	0	2.9	1.4

Intersection	
Intersection Delay, s/veh	20.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	180	100	0	0	0	100	80	160	240	90	40
Future Vol, veh/h	110	180	100	0	0	0	100	80	160	240	90	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	121	198	110	0	0	0	110	88	176	264	99	44
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	22.8	17.5	21.1
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	28%	65%
Vol Thru, %	24%	46%	24%
Vol Right, %	47%	26%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	340	390	370
LT Vol	100	110	240
Through Vol	80	180	90
RT Vol	160	100	40
Lane Flow Rate	374	429	407
Geometry Grp	1	1	1
Degree of Util (X)	0.603	0.714	0.68
Departure Headway (Hd)	5.811	5.996	6.021
Convergence, Y/N	Yes	Yes	Yes
Cap	616	600	594
Service Time	3.905	4.078	4.112
HCM Lane V/C Ratio	0.607	0.715	0.685
HCM Control Delay	17.5	22.8	21.1
HCM Lane LOS	C	C	C
HCM 95th-tile Q	4	5.9	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	160	220	40	380	1600	0	0	500	580
Future Volume (veh/h)	0	0	0	160	220	40	380	1600	0	0	500	580
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				168	232	42	400	1684	0	0	526	611
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				300	491	87	467	2526	0	0	1866	811
Arrive On Green				0.17	0.17	0.17	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1767	2897	514	3428	3618	0	0	3618	1532
Grp Volume(v), veh/h				168	133	141	400	1684	0	0	526	611
Grp Sat Flow(s),veh/h/ln				1767	1689	1723	1714	1763	0	0	1763	1532
Q Serve(g_s), s				7.5	6.1	6.4	9.5	0.0	0.0	0.0	7.1	26.9
Cycle Q Clear(g_c), s				7.5	6.1	6.4	9.5	0.0	0.0	0.0	7.1	26.9
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				300	286	292	467	2526	0	0	1866	811
V/C Ratio(X)				0.56	0.47	0.48	0.86	0.67	0.00	0.00	0.28	0.75
Avail Cap(c_a), veh/h				536	512	523	502	2526	0	0	1866	811
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.26	0.26	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.8	32.2	32.3	30.5	0.0	0.0	0.0	11.2	15.9
Incr Delay (d2), s/veh				0.6	0.4	0.5	3.9	0.4	0.0	0.0	0.4	6.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	2.5	2.6	3.6	0.1	0.0	0.0	2.7	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.4	32.6	32.8	34.4	0.4	0.0	0.0	11.6	22.3
LnGrp LOS				C	C	C	C	A	A	A	B	C
Approach Vol, veh/h					442			2084			1137	
Approach Delay, s/veh					33.0			6.9			17.3	
Approach LOS					C			A			B	

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		66.5			16.1	50.4		19.5
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1
Max Q Clear Time (g_c+I1), s		2.0			11.5	28.9		9.5
Green Ext Time (p_c), s		26.0			0.2	2.3		1.6

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1080	360	200	0	0	0	0	900	150	260	400	0
Future Volume (veh/h)	1080	360	200	0	0	0	0	900	150	260	400	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1113	371	206				0	928	155	268	412	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1241	652	415				0	1084	464	341	1510	0
Arrive On Green	0.35	0.35	0.35				0.00	0.38	0.38	0.10	0.53	0.00
Sat Flow, veh/h	3534	1856	1183				0	2897	1208	3428	2897	0
Grp Volume(v), veh/h	1113	371	206				0	928	155	268	412	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1183				0	1411	1208	1714	1411	0
Q Serve(g_s), s	25.6	13.9	11.8				0.0	25.9	7.8	6.6	6.8	0.0
Cycle Q Clear(g_c), s	25.6	13.9	11.8				0.0	25.9	7.8	6.6	6.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1241	652	415				0	1084	464	341	1510	0
V/C Ratio(X)	0.90	0.57	0.50				0.00	0.86	0.33	0.79	0.27	0.00
Avail Cap(c_a), veh/h	1360	714	455				0	1084	464	343	1510	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.78	0.78	0.96	0.96	0.00
Uniform Delay (d), s/veh	26.4	22.6	21.9				0.0	24.3	18.7	37.8	10.9	0.0
Incr Delay (d2), s/veh	7.3	0.4	0.3				0.0	6.9	1.5	10.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	5.9	3.2				0.0	9.2	2.3	3.2	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	23.1	22.3				0.0	31.2	20.2	47.9	11.3	0.0
LnGrp LOS	C	C	C				A	C	C	D	B	A
Approach Vol, veh/h		1690						1083			680	
Approach Delay, s/veh		30.0						29.7			25.7	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	37.9		35.1		50.9
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1
Max Q Clear Time (g_c+I1), s	8.6	27.9		27.6		8.8
Green Ext Time (p_c), s	0.0	1.5		2.5		3.3

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	60	50	130	150	840	0	0	490	110
Future Volume (veh/h)	80	0	100	60	50	130	150	840	0	0	490	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	84	0	105	63	53	137	158	884	0	0	516	116
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	49	0	61	323	339	269	199	1421	0	0	890	380
Arrive On Green	0.07	0.00	0.07	0.18	0.18	0.18	0.11	0.50	0.00	0.00	0.32	0.32
Sat Flow, veh/h	728	0	910	1767	1856	1474	1767	2897	0	0	2897	1206
Grp Volume(v), veh/h	189	0	0	63	53	137	158	884	0	0	516	116
Grp Sat Flow(s),veh/h/ln	1639	0	0	1767	1856	1474	1767	1411	0	0	1411	1206
Q Serve(g_s), s	4.0	0.0	0.0	1.8	1.4	5.0	5.2	13.6	0.0	0.0	9.2	4.4
Cycle Q Clear(g_c), s	4.0	0.0	0.0	1.8	1.4	5.0	5.2	13.6	0.0	0.0	9.2	4.4
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	109	0	0	323	339	269	199	1421	0	0	890	380
V/C Ratio(X)	1.73	0.00	0.00	0.20	0.16	0.51	0.79	0.62	0.00	0.00	0.58	0.30
Avail Cap(c_a), veh/h	109	0	0	767	806	640	251	2149	0	0	1517	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	0.0	20.7	20.6	22.1	25.9	10.8	0.0	0.0	17.2	15.5
Incr Delay (d2), s/veh	362.4	0.0	0.0	0.1	0.1	0.6	13.6	0.2	0.0	0.0	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	0.0	0.0	0.7	0.6	1.7	2.8	3.5	0.0	0.0	2.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	390.4	0.0	0.0	20.9	20.7	22.6	39.5	10.9	0.0	0.0	17.9	16.1
LnGrp LOS	F	A	A	C	C	C	D	B	A	A	B	B
Approach Vol, veh/h		189			253			1042			632	
Approach Delay, s/veh		390.4			21.8			15.3			17.6	
Approach LOS		F			C			B			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		34.6		8.0	11.3	23.3		17.3
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		15.6		6.0	7.2	11.2		7.0
Green Ext Time (p_c), s		4.7		0.0	0.1	4.6		0.8

Intersection Summary	
HCM 6th Ctrl Delay	50.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	610	100	80	0	0	0	0	380	60	220	140	0
Future Volume (veh/h)	610	100	80	0	0	0	0	380	60	220	140	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	709	0	83				0	396	62	229	146	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1021	0	761				0	617	96	283	541	0
Arrive On Green	0.29	0.00	0.29				0.00	0.20	0.20	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1526				0	3119	469	1767	3544	0
Grp Volume(v), veh/h	709	0	83				0	229	229	229	146	0
Grp Sat Flow(s),veh/h/ln	1767	0	1526				0	1763	1732	1767	1689	0
Q Serve(g_s), s	7.5	0.0	1.2				0.0	5.0	5.1	5.2	1.6	0.0
Cycle Q Clear(g_c), s	7.5	0.0	1.2				0.0	5.0	5.1	5.2	1.6	0.0
Prop In Lane	1.00		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	1021	0	761				0	359	353	283	541	0
V/C Ratio(X)	0.69	0.00	0.11				0.00	0.64	0.65	0.81	0.27	0.00
Avail Cap(c_a), veh/h	2520	0	1409				0	591	580	283	541	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	5.7				0.0	15.2	15.3	16.9	15.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0				0.0	0.7	0.8	16.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.5				0.0	1.7	1.7	3.1	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	5.7				0.0	15.9	16.0	33.0	15.7	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		792						458			375	
Approach Delay, s/veh		12.7						16.0			26.2	
Approach LOS		B						B			C	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.5		18.3		11.0
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.8		6.7
Max Q Clear Time (g_c+I1), s				7.1		9.5		7.2
Green Ext Time (p_c), s				1.1		1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

33: Pacific Hwy & Sassafras St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	200	110	390	290	70	180	380	60	170	870	50
Future Volume (veh/h)	60	200	110	390	290	70	180	380	60	170	870	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	61	204	112	398	296	71	184	388	61	173	888	51
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	78	281	276	347	447	107	134	991	151	200	1401	80
Arrive On Green	0.04	0.18	0.18	0.24	0.38	0.38	0.08	0.23	0.23	0.14	0.29	0.29
Sat Flow, veh/h	1767	1537	1510	1464	1191	286	1767	4396	668	1464	4892	280
Grp Volume(v), veh/h	61	204	112	398	0	367	184	295	154	173	612	327
Grp Sat Flow(s),veh/h/ln	1767	1537	1510	1464	0	1476	1767	1689	1687	1464	1689	1795
Q Serve(g_s), s	3.0	10.9	5.7	20.6	0.0	18.0	6.6	6.4	6.8	10.1	13.7	13.8
Cycle Q Clear(g_c), s	3.0	10.9	5.7	20.6	0.0	18.0	6.6	6.4	6.8	10.1	13.7	13.8
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.40	1.00		0.16
Lane Grp Cap(c), veh/h	78	281	276	347	0	554	134	761	380	200	967	514
V/C Ratio(X)	0.78	0.73	0.41	1.15	0.00	0.66	1.37	0.39	0.41	0.86	0.63	0.64
Avail Cap(c_a), veh/h	128	565	555	347	0	786	134	986	493	219	1235	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	33.5	31.4	33.2	0.0	22.6	40.2	28.6	28.7	36.7	27.1	27.1
Incr Delay (d2), s/veh	6.3	1.4	0.4	94.9	0.0	1.4	207.5	0.6	1.3	24.9	1.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.1	2.1	16.2	0.0	6.2	10.5	2.6	2.8	4.9	5.5	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	34.9	31.8	128.0	0.0	24.0	247.7	29.2	30.0	61.7	28.3	29.4
LnGrp LOS	D	C	C	F	A	C	F	C	C	E	C	C
Approach Vol, veh/h		377			765			633			1112	
Approach Delay, s/veh		36.0			78.1			92.9			33.8	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	24.9	25.0	20.8	11.0	30.2	8.2	37.5
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	12.1	8.8	22.6	12.9	8.6	15.8	5.0	20.0
Green Ext Time (p_c), s	0.0	4.2	0.0	0.9	0.0	8.4	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	58.8
HCM 6th LOS	E

34: Pacific Hwy & Laurel St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1270	110	100	700	110	110	380	140	190	840	610
Future Volume (veh/h)	350	1270	110	100	700	110	110	380	140	190	840	610
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	402	1460	126	115	805	126	126	437	161	218	966	701
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	423	1335	114	137	765	120	148	855	299	242	1449	813
Arrive On Green	0.24	0.41	0.41	0.08	0.25	0.25	0.08	0.23	0.23	0.14	0.29	0.29
Sat Flow, veh/h	1767	3278	281	1767	3038	476	1767	3665	1284	1767	5066	1525
Grp Volume(v), veh/h	402	780	806	115	467	464	126	401	197	218	966	701
Grp Sat Flow(s),veh/h/ln	1767	1763	1797	1767	1763	1751	1767	1689	1571	1767	1689	1525
Q Serve(g_s), s	31.3	57.0	57.0	9.0	35.2	35.2	9.8	14.5	15.4	17.0	23.6	40.1
Cycle Q Clear(g_c), s	31.3	57.0	57.0	9.0	35.2	35.2	9.8	14.5	15.4	17.0	23.6	40.1
Prop In Lane	1.00		0.16	1.00		0.27	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	423	718	731	137	444	441	148	787	366	242	1449	813
V/C Ratio(X)	0.95	1.09	1.10	0.84	1.05	1.05	0.85	0.51	0.54	0.90	0.67	0.86
Avail Cap(c_a), veh/h	437	718	731	159	444	441	155	787	366	323	1449	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	41.5	41.5	63.7	52.4	52.4	63.2	46.7	47.1	59.5	44.1	29.1
Incr Delay (d2), s/veh	30.1	59.8	64.5	24.7	57.2	57.4	30.6	2.3	5.6	19.0	2.4	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	36.3	38.0	5.0	22.6	22.5	5.7	6.4	6.6	8.9	10.2	22.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.5	101.3	106.0	88.4	109.6	109.8	93.9	49.1	52.6	78.5	46.5	40.7
LnGrp LOS	F	F	F	F	F	F	F	D	D	E	D	D
Approach Vol, veh/h		1988			1046			724			1885	
Approach Delay, s/veh		99.4			107.3			57.8			48.1	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	37.9	16.2	62.3	16.2	45.4	37.9	40.5
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	19.0	17.4	11.0	59.0	11.8	42.1	33.3	37.2
Green Ext Time (p_c), s	0.2	2.9	0.0	0.0	0.0	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1430	2350	1600	160	90	110
Future Volume (veh/h)	1430	2350	1600	160	90	110
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1538	2527	1720	0	97	118
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4153	2211		164	146
Arrive On Green	0.35	0.82	0.44	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1538	2527	1720	0	97	118
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	21.5	34.8	0.0	6.3	8.8
Cycle Q Clear(g_c), s	41.6	21.5	34.8	0.0	6.3	8.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4153	2211		164	146
V/C Ratio(X)	1.29	0.61	0.78		0.59	0.81
Avail Cap(c_a), veh/h	1188	4153	2211		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	3.9	28.9	0.0	52.3	53.4
Incr Delay (d2), s/veh	138.7	0.7	2.8	0.0	1.3	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	40.1	5.5	14.4	0.0	2.9	7.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	177.9	4.6	31.6	0.0	53.5	57.4
LnGrp LOS	F	A	C		D	E
Approach Vol, veh/h		4065	1720	A	215	
Approach Delay, s/veh		70.1	31.6		55.7	
Approach LOS		E	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.7		16.3	46.0	57.7
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		23.5		10.8	43.6	36.8
Green Ext Time (p_c), s		54.9		0.3	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			58.6			
HCM 6th LOS			E			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	160	260	210	80	190	190	1160	160	170	1210	210
Future Volume (veh/h)	180	160	260	210	80	190	190	1160	160	170	1210	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	188	167	271	219	83	198	198	1208	167	177	1260	219
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	250	383	310	190	446	364	258	1204	166	207	1516	781
Arrive On Green	0.07	0.21	0.21	0.11	0.24	0.24	0.08	0.39	0.39	0.12	0.43	0.43
Sat Flow, veh/h	3428	1856	1504	1767	1856	1516	3428	3101	427	1767	3526	1549
Grp Volume(v), veh/h	188	167	271	219	83	198	198	684	691	177	1260	219
Grp Sat Flow(s),veh/h/ln	1714	1856	1504	1767	1856	1516	1714	1763	1764	1767	1763	1549
Q Serve(g_s), s	5.8	8.5	18.9	11.6	3.8	12.3	6.1	42.0	42.0	10.6	34.3	8.8
Cycle Q Clear(g_c), s	5.8	8.5	18.9	11.6	3.8	12.3	6.1	42.0	42.0	10.6	34.3	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	250	383	310	190	446	364	258	685	685	207	1516	781
V/C Ratio(X)	0.75	0.44	0.87	1.16	0.19	0.54	0.77	1.00	1.01	0.86	0.83	0.28
Avail Cap(c_a), veh/h	361	532	431	190	529	432	285	685	685	265	1607	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	37.4	41.6	48.3	32.7	35.9	49.1	33.1	33.1	46.9	27.3	15.5
Incr Delay (d2), s/veh	2.5	0.8	13.5	113.4	0.1	0.5	9.2	34.2	36.3	16.2	3.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.9	7.9	10.9	1.7	4.4	2.9	23.3	23.8	5.5	14.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	38.2	55.1	161.7	32.7	36.4	58.3	67.3	69.4	63.1	31.3	15.8
LnGrp LOS	D	D	E	F	C	D	E	E	F	E	C	B
Approach Vol, veh/h		626			500			1573			1656	
Approach Delay, s/veh		49.6			90.6			67.1			32.6	
Approach LOS		D			F			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	47.3	16.0	27.8	12.5	51.8	12.3	31.5				
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5				
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8				
Max Q Clear Time (g_c+I1), s	12.6	44.0	13.6	20.9	8.1	36.3	7.8	14.3				
Green Ext Time (p_c), s	0.1	0.0	0.0	1.4	0.0	9.5	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			54.2									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1090	240	230	520	0	0	0	0	160	0	1000
Future Volume (veh/h)	0	1090	240	230	520	0	0	0	0	160	0	1000
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1147	253	242	547	0				168	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1333	595	1245	2790	0				199	0	
Arrive On Green	0.00	0.38	0.38	0.73	1.00	0.00				0.11	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1147	253	242	547	0				168	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	30.0	11.9	2.2	0.0	0.0				9.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	30.0	11.9	2.2	0.0	0.0				9.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1333	595	1245	2790	0				199	0	
V/C Ratio(X)	0.00	0.86	0.43	0.19	0.20	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1833	818	1245	2790	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.36	0.36	0.75	0.75	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	28.7	23.0	9.0	0.0	0.0				43.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.9	0.8	0.1	0.1	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.4	4.3	0.8	0.0	0.0				4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.5	23.8	9.1	0.1	0.0				47.2	0.0	0.0
LnGrp LOS	A	C	C	A	A	A				D	A	
Approach Vol, veh/h		1400			789						168	A
Approach Delay, s/veh		30.1			2.9						47.2	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	11.3	42.8	15.9	84.1
Change Period (Y+Rc), s	5.0	* 5	4.6	5.0
Max Green Setting (Gmax), s	13.8	* 52	20.4	70.0
Max Q Clear Time (g_c+I1), s	4.2	32.0	11.3	2.0
Green Ext Time (p_c), s	0.5	5.8	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	800	500	0	0	470	340	280	10	550	0	0	0
Future Volume (veh/h)	800	500	0	0	470	340	280	10	550	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	808	505	0	0	475	343	283	10	556			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1014	2168	0	0	516	371	486	17	447			
Arrive On Green	0.49	1.00	0.00	0.00	0.27	0.27	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2011	1380	1710	60	1572			
Grp Volume(v), veh/h	808	505	0	0	436	382	293	0	556			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1535	1770	0	1572			
Q Serve(g_s), s	19.7	0.0	0.0	0.0	24.0	24.2	14.2	0.0	28.4			
Cycle Q Clear(g_c), s	19.7	0.0	0.0	0.0	24.0	24.2	14.2	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.90	0.97		1.00			
Lane Grp Cap(c), veh/h	1014	2168	0	0	474	413	503	0	447			
V/C Ratio(X)	0.80	0.23	0.00	0.00	0.92	0.92	0.58	0.00	1.24			
Avail Cap(c_a), veh/h	1014	2168	0	0	494	430	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.62	0.62	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	22.8	0.0	0.0	0.0	35.5	35.5	30.7	0.0	35.8			
Incr Delay (d2), s/veh	2.8	0.2	0.0	0.0	25.5	28.7	1.2	0.0	127.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.3	0.0	0.0	0.0	13.3	12.0	6.1	0.0	37.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.2	0.0	0.0	60.9	64.2	31.9	0.0	163.7			
LnGrp LOS	C	A	A	A	E	E	C	A	F			
Approach Vol, veh/h		1313			818			849				
Approach Delay, s/veh		15.8			62.5			118.2				
Approach LOS		B			E			F				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	33.0	35.1	31.9
Change Period (Y+Rc), s	5.5	4.6	5.5	* 5
Max Green Setting (Gmax), s	61.5	28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s	2.0	30.4	21.7	26.2
Green Ext Time (p_c), s	2.3	0.0	2.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	57.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1020	10	350	790	0	1230
Future Volume (veh/h)	1020	10	350	790	0	1230
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1084	0	368	0	0	1295
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1212	552	1580		0	1580
Arrive On Green	0.34	0.00	0.45	0.00	0.00	0.45
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1084	0	368	0	0	1295
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	19.8	0.0	4.4	0.0	0.0	21.8
Cycle Q Clear(g_c), s	19.8	0.0	4.4	0.0	0.0	21.8
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1212	552	1580		0	1580
V/C Ratio(X)	0.89	0.00	0.23		0.00	0.82
Avail Cap(c_a), veh/h	1273	580	1580		0	1580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	11.6	0.0	0.0	16.4
Incr Delay (d2), s/veh	8.4	0.0	0.3	0.0	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	1.6	0.0	0.0	8.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.5	0.0	11.9	0.0	0.0	21.2
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1084		368	A		1295
Approach Delay, s/veh	29.5		11.9			21.2
Approach LOS	C		B			C

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	36.0	36.0	32.0
Change Period (Y+Rc), s	5.5	* 5.5	8.7
Max Green Setting (Gmax), s	29.3	* 30	24.5
Max Q Clear Time (g_c+I1), s	6.4	23.8	21.8
Green Ext Time (p_c), s	3.2	4.8	1.6

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX W

NEAR-TERM YEAR 2030 FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6380	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1170
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6340	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1162
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7750	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1421
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8		

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8960	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1643
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1623
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7820	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1731
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8340	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1846
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.4
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1844
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.4
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7170	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1587
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7640	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1692
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

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HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8160	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1807
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8150	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1804
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5510	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1525
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5880	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1627
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6270	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1735
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6260	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1732
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5690	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1575
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6060	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1677
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6470	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1790
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6460	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1788
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7480	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1656
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7970	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1765
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8500	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1882
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8500	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1882
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7180	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1590
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8330	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1844
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8880	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1966
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.2
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8880	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1966
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	51.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.2
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6530	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1807
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6950	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1924
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.5
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7420	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2054
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.4
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7410	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2051
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.3
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8540	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1891
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9100	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2015
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.2
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9710	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2150
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.2
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9700	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2148
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	42.2
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7820	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1731
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8340	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1846
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8900	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1970
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8890	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1968
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.8
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3550	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	970
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2770	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	757
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.2
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4500	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1230
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.4
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4330	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1184
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Basline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3990	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1090
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.49
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5480	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1498
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5630	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2052
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.3
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4300	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1567
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.4
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6110	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1336
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8380	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1832
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8620	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1885
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	45.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.1
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6580	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1439
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6050	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1654
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8300	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2269
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8540	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1867
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6520	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1426
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.3
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6510	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1778
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8930	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2438
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.09
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9190	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2008
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.5
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	2030 Baseline
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7020	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1533
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.4
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX X

NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%) INTERSECTION ANALYSIS CALCULATION SHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	160	180	80	130	120	670
Future Volume (vph)	160	180	80	130	120	670
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	196	87	141	130	728

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	174	196	228	130	728
Volume Left (vph)	174	0	0	130	0
Volume Right (vph)	0	0	141	0	728
Hadj (s)	0.55	0.05	-0.32	0.25	-0.55
Departure Headway (s)	5.6	5.1	4.5	5.5	3.2
Degree Utilization, x	0.27	0.28	0.28	0.20	0.65
Capacity (veh/h)	623	683	769	608	1119
Control Delay (s)	9.5	8.9	9.3	9.8	11.9
Approach Delay (s)	9.2		9.3	11.6	
Approach LOS	A		A	B	

Intersection Summary			
Delay	10.6		
Level of Service	B		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	247	110	700	50	230	160
Future Volume (veh/h)	247	110	700	50	230	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	263	117	745	0	245	170
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	326	1119	1169		472	507
Arrive On Green	0.18	0.60	0.33	0.00	0.14	0.14
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	263	117	745	0	245	170
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	6.9	1.3	8.6	0.0	3.2	4.0
Cycle Q Clear(g_c), s	6.9	1.3	8.6	0.0	3.2	4.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	326	1119	1169		472	507
V/C Ratio(X)	0.81	0.10	0.64		0.52	0.34
Avail Cap(c_a), veh/h	725	2116	2266		1599	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	4.1	13.7	0.0	19.3	12.4
Incr Delay (d2), s/veh	1.8	0.0	0.2	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.3	2.9	0.0	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	4.1	13.9	0.0	19.6	12.6
LnGrp LOS	C	A	B		B	B
Approach Vol, veh/h		380	745	A	415	
Approach Delay, s/veh		15.5	13.9		16.7	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		35.1		13.1	13.1	22.0
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		55.0		22.5	* 20	31.0
Max Q Clear Time (g_c+I1), s		3.3		6.0	8.9	10.6
Green Ext Time (p_c), s		0.4		0.7	0.3	3.5

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	0	221	0	0	10	328	247	0	10	650	170
Future Volume (veh/h)	110	0	221	0	0	10	328	247	0	10	650	170
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	116	0	233				345	260	0	11	684	179
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	791	0	552				465	1698	0	20	974	255
Arrive On Green	0.22	0.00	0.22				0.14	0.48	0.00	0.01	0.36	0.36
Sat Flow, veh/h	3534	0	1515				3428	3618	0	1767	2724	712
Grp Volume(v), veh/h	116	0	233				345	260	0	11	442	421
Grp Sat Flow(s),veh/h/ln	1767	0	1515				1714	1763	0	1767	1763	1673
Q Serve(g_s), s	1.4	0.0	6.0				5.0	2.1	0.0	0.3	11.1	11.1
Cycle Q Clear(g_c), s	1.4	0.0	6.0				5.0	2.1	0.0	0.3	11.1	11.1
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.43
Lane Grp Cap(c), veh/h	791	0	552				465	1698	0	20	630	598
V/C Ratio(X)	0.15	0.00	0.42				0.74	0.15	0.00	0.55	0.70	0.70
Avail Cap(c_a), veh/h	2055	0	1094				505	1729	0	175	779	740
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	12.5				21.4	7.5	0.0	25.4	14.2	14.2
Incr Delay (d2), s/veh	0.1	0.0	0.8				4.5	0.0	0.0	8.5	2.5	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.6				2.1	0.7	0.0	0.2	4.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.0	13.3				25.9	7.5	0.0	33.9	16.8	16.9
LnGrp LOS	B	A	B				C	A	A	C	B	B
Approach Vol, veh/h		349						605			874	
Approach Delay, s/veh		14.3						18.0			17.1	
Approach LOS		B						B			B	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	5.0	29.8	16.9	11.4	23.3
Change Period (Y+Rc), s	4.4	4.9	5.3	4.4	4.9
Max Green Setting (Gmax), s	5.1	25.3	30.0	7.6	22.8
Max Q Clear Time (g_c+I1), s	2.3	4.1	8.0	7.0	13.1
Green Ext Time (p_c), s	0.0	1.7	2.2	0.1	4.8

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	63	10	170	30	405	36	100	621	30
Future Volume (veh/h)	10	10	10	63	10	170	30	405	36	100	621	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	66	10	177	31	422	38	104	647	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	203	153	183	55	303	51	1434	127	133	1196	57
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.03	0.30	0.30	0.08	0.35	0.35
Sat Flow, veh/h	362	710	536	264	191	1061	1767	4715	417	1767	3416	163
Grp Volume(v), veh/h	30	0	0	253	0	0	31	300	160	104	334	344
Grp Sat Flow(s),veh/h/ln	1608	0	0	1516	0	0	1767	1689	1755	1767	1763	1816
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.7	2.9	3.0	2.4	6.4	6.4
Cycle Q Clear(g_c), s	0.5	0.0	0.0	5.9	0.0	0.0	0.7	2.9	3.0	2.4	6.4	6.4
Prop In Lane	0.33		0.33	0.26		0.70	1.00		0.24	1.00		0.09
Lane Grp Cap(c), veh/h	572	0	0	540	0	0	51	1027	534	133	617	636
V/C Ratio(X)	0.05	0.00	0.00	0.47	0.00	0.00	0.61	0.29	0.30	0.78	0.54	0.54
Avail Cap(c_a), veh/h	1194	0	0	1168	0	0	234	2001	1040	442	1253	1291
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	12.9	0.0	0.0	20.3	11.3	11.3	19.3	11.0	11.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	4.3	0.2	0.4	3.8	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.7	0.0	0.0	0.3	0.9	1.0	1.0	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	0.0	13.1	0.0	0.0	24.6	11.5	11.7	23.0	12.0	12.0
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		30			253			491			782	
Approach Delay, s/veh		11.0			13.1			12.4			13.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	7.6	17.8	17.0	5.6	19.7	17.0
Change Period (Y+Rc), s	4.4	4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	10.6	25.1	30.1	5.6	30.1	30.1
Max Q Clear Time (g_c+I1), s	4.4	5.0	2.5	2.7	8.4	7.9
Green Ext Time (p_c), s	0.1	3.8	0.1	0.0	5.6	1.1

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

5: Congress St & Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	371	150	130	574	0	110	0	110	0	0	0
Future Volume (veh/h)	0	371	150	130	574	0	110	0	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00	0.85		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	382	155	134	592	0	113	0	113	0	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	941	355	169	1562	0	390	0	224	0	273	0
Arrive On Green	0.00	0.34	0.34	0.10	0.56	0.00	0.15	0.00	0.15	0.00	0.00	0.00
Sat Flow, veh/h	0	2926	1054	1767	2849	0	1200	0	1523	0	1856	0
Grp Volume(v), veh/h	0	362	175	134	592	0	113	0	113	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1189	1767	1388	0	1200	0	1523	0	1856	0
Q Serve(g_s), s	0.0	3.5	3.9	2.5	4.0	0.0	3.0	0.0	2.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.5	3.9	2.5	4.0	0.0	3.0	0.0	2.3	0.0	0.0	0.0
Prop In Lane	0.00		0.89	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	895	400	169	1562	0	390	0	224	0	273	0
V/C Ratio(X)	0.00	0.40	0.44	0.79	0.38	0.00	0.29	0.00	0.50	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1976	884	293	2884	0	1282	0	1357	0	1703	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.6	8.7	14.9	4.1	0.0	13.6	0.0	13.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	3.1	0.1	0.0	0.2	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.8	1.0	0.5	0.0	0.7	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.9	9.4	18.1	4.2	0.0	13.7	0.0	13.9	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		537			726			226			0	
Approach Delay, s/veh		9.1			6.7			13.8			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	16.3		9.9		23.9		9.9
Change Period (Y+Rc), s	4.4	4.9		* 4.9		4.9		4.9
Max Green Setting (Gmax), s	5.6	25.1		* 31		35.1		30.1
Max Q Clear Time (g_c+I1), s	4.5	5.9		0.0		6.0		5.0
Green Ext Time (p_c), s	0.0	3.3		0.0		2.9		0.7

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

6: Pacific Hwy & Rosecrans St/Taylor St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	240	150	324	230	130	180	437	241	60	244	130
Future Volume (veh/h)	95	240	150	324	230	130	180	437	241	60	244	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.93	1.00		0.95	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	102	258	161	348	247	140	194	470	259	65	262	140
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	890	540	333	544	429	143	1016	492	77	928	365
Arrive On Green	0.07	0.32	0.32	0.12	0.37	0.37	0.08	0.29	0.29	0.06	0.26	0.26
Sat Flow, veh/h	1767	2776	1289	2699	1461	1152	1767	3526	1179	1391	3526	1387
Grp Volume(v), veh/h	102	258	161	348	247	140	194	470	259	65	262	140
Grp Sat Flow(s),veh/h/ln	1767	1388	1289	1350	1461	1152	1767	1763	1179	1391	1763	1387
Q Serve(g_s), s	6.3	7.7	9.4	13.6	14.1	9.6	8.9	12.1	18.3	5.1	6.5	9.1
Cycle Q Clear(g_c), s	6.3	7.7	9.4	13.6	14.1	9.6	8.9	12.1	18.3	5.1	6.5	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	890	540	333	544	429	143	1016	492	77	928	365
V/C Ratio(X)	0.80	0.29	0.30	1.05	0.45	0.33	1.36	0.46	0.53	0.84	0.28	0.38
Avail Cap(c_a), veh/h	151	909	549	333	544	429	143	1212	558	114	1215	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	28.1	22.6	48.3	26.2	24.7	50.7	32.2	24.5	51.6	32.3	33.3
Incr Delay (d2), s/veh	19.4	0.2	0.4	61.7	0.3	0.2	200.6	0.3	0.9	20.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.6	2.9	7.4	4.9	2.6	11.9	5.2	5.1	2.2	2.8	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	28.3	23.0	110.0	26.5	25.0	251.3	32.6	25.3	71.8	32.4	33.5
LnGrp LOS	E	C	C	F	C	C	F	C	C	E	C	C
Approach Vol, veh/h		521			735			923			467	
Approach Delay, s/veh		34.8			65.7			76.5			38.2	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	41.3	14.3	35.7	13.3	46.9	11.5	38.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	13.6	36.1	8.9	38.0	9.4	40.3	9.0	37.9
Max Q Clear Time (g_c+I1), s	15.6	11.4	10.9	11.1	8.3	16.1	7.1	20.3
Green Ext Time (p_c), s	0.0	2.9	0.0	1.4	0.0	1.3	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	58.5
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	20	40	455	440	100
Future Vol, veh/h	30	20	40	455	440	100
Conflicting Peds, #/hr	10	10	94	0	0	94
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	31	20	41	464	449	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	918	604	645	0	-	0
Stage 1	594	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	284	495	932	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	224	446	849	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.7	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	849	-	280	-	-
HCM Lane V/C Ratio	0.048	-	0.182	-	-
HCM Control Delay (s)	9.5	-	20.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	470	300	260	1617	0	0	2280	410
Future Volume (veh/h)	0	0	0	90	470	300	260	1617	0	0	2280	410
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				93	485	309	268	1667	0	0	2351	423
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				105	555	382	175	3132	0	0	2439	728
Arrive On Green				0.31	0.31	0.31	0.20	1.00	0.00	0.00	0.48	0.48
Sat Flow, veh/h				342	1813	1248	1767	5233	0	0	5233	1513
Grp Volume(v), veh/h				500	0	387	268	1667	0	0	2351	423
Grp Sat Flow(s),veh/h/ln				1838	0	1565	1767	1689	0	0	1689	1513
Q Serve(g_s), s				33.7	0.0	29.7	12.9	0.0	0.0	0.0	58.4	26.2
Cycle Q Clear(g_c), s				33.7	0.0	29.7	12.9	0.0	0.0	0.0	58.4	26.2
Prop In Lane				0.19		0.80	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				563	0	479	175	3132	0	0	2439	728
V/C Ratio(X)				0.89	0.00	0.81	1.53	0.53	0.00	0.00	0.96	0.58
Avail Cap(c_a), veh/h				622	0	530	175	3132	0	0	2463	736
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.68	0.68	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.0	0.0	41.6	52.1	0.0	0.0	0.0	32.6	24.3
Incr Delay (d2), s/veh				12.8	0.0	7.4	256.4	0.4	0.0	0.0	11.5	3.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				17.2	0.0	12.4	17.5	0.1	0.0	0.0	25.5	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				55.8	0.0	49.0	308.5	0.4	0.0	0.0	44.2	27.6
LnGrp LOS				E	A	D	F	A	A	A	D	C
Approach Vol, veh/h					887			1935			2774	
Approach Delay, s/veh					52.8			43.1			41.6	
Approach LOS					D			D			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	85.3	44.7	17.8	67.5
Change Period (Y+Rc), s	4.9	4.9	4.9	* 4.9
Max Green Setting (Gmax), s	76.2	44.0	8.6	* 63
Max Q Clear Time (g_c+I1), s	2.0	35.7	14.9	60.4
Green Ext Time (p_c), s	5.8	1.7	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9: Camino Del Rio W & Kurtz St

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	220	110	0	0	0	0	1617	20	230	2210	0
Future Volume (veh/h)	270	220	110	0	0	0	0	1617	20	230	2210	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	258	268	116				0	1702	21	242	2326	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	336	353	288				0	2847	35	262	4687	0
Arrive On Green	0.19	0.19	0.19				0.00	1.00	1.00	0.30	1.00	0.00
Sat Flow, veh/h	1767	1856	1511				0	5323	64	1767	6643	0
Grp Volume(v), veh/h	258	268	116				0	1115	608	242	2326	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1511				0	1689	1842	1767	1596	0
Q Serve(g_s), s	18.0	17.8	8.7				0.0	0.0	0.0	17.2	0.0	0.0
Cycle Q Clear(g_c), s	18.0	17.8	8.7				0.0	0.0	0.0	17.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	336	353	288				0	1865	1017	262	4687	0
V/C Ratio(X)	0.77	0.76	0.40				0.00	0.60	0.60	0.92	0.50	0.00
Avail Cap(c_a), veh/h	613	644	524				0	1865	1017	294	4687	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.71	0.71	0.27	0.27	0.00
Uniform Delay (d), s/veh	49.9	49.8	46.1				0.0	0.0	0.0	45.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	1.3	0.3				0.0	1.0	1.8	11.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	8.4	3.3				0.0	0.3	0.5	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	51.1	46.5				0.0	1.0	1.8	56.4	0.1	0.0
LnGrp LOS	D	D	D				A	A	A	E	A	A
Approach Vol, veh/h		642						1723			2568	
Approach Delay, s/veh		50.3						1.3			5.4	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	23.7	76.7	29.6	100.4
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.6	49.1	45.1	75.1
Max Q Clear Time (g_c+I1), s	19.2	2.0	20.0	2.0
Green Ext Time (p_c), s	0.0	5.1	0.7	10.8

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

10: Rosecrans St & Kurtz St

08/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	220	10	199	0	260	0	365	177	60	260	0
Future Volume (veh/h)	200	220	10	199	0	260	0	365	177	60	260	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.85	0.96		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	215	237	11	214	0	280	0	392	190	65	280	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	422	419	19	0	0	0	0	881	415	456	1931	0
Arrive On Green	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.40	0.40	0.05	0.55	0.00
Sat Flow, veh/h	1767	1755	81		0		0	2278	1029	1767	3618	0
Grp Volume(v), veh/h	215	0	248		0.0		0	314	268	65	280	0
Grp Sat Flow(s),veh/h/ln	1767	0	1836				0	1763	1452	1767	1763	0
Q Serve(g_s), s	4.8	0.0	5.5				0.0	5.9	6.2	0.9	1.8	0.0
Cycle Q Clear(g_c), s	4.8	0.0	5.5				0.0	5.9	6.2	0.9	1.8	0.0
Prop In Lane	1.00		0.04				0.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h	422	0	439				0	710	585	456	1931	0
V/C Ratio(X)	0.51	0.00	0.57				0.00	0.44	0.46	0.14	0.14	0.00
Avail Cap(c_a), veh/h	889	0	923				0	925	762	584	2617	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.1	0.0	15.4				0.0	10.0	10.0	6.9	5.1	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.1				0.0	2.0	2.6	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.1				0.0	2.2	2.0	0.2	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	16.5				0.0	12.0	12.6	6.9	5.3	0.0
LnGrp LOS	B	A	B				A	B	B	A	A	A
Approach Vol, veh/h		463						582			345	
Approach Delay, s/veh		16.3						12.3			5.6	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	6.7	23.4	15.9	30.1
Change Period (Y+Rc), s	4.4	4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	24.1	23.1	34.1
Max Q Clear Time (g_c+I1), s	2.9	8.2	7.5	3.8
Green Ext Time (p_c), s	0.0	8.0	1.9	5.1

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

11: Rosecrans St & Sports Arena Blvd & Camino Del Rio W

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	220	127	201	238	20	132	1477	297	0	1870	370
Future Volume (veh/h)	180	220	127	201	238	20	132	1477	297	0	1870	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	140	300	134	161	322	21	139	1555	313	0	1968	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	386	811	309	196	381	25	140	2254	451	0	2291	
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.08	1.00	1.00	0.00	0.90	0.00
Sat Flow, veh/h	1767	3711	1415	1767	3437	223	3428	4215	843	0	5233	1572
Grp Volume(v), veh/h	140	300	134	161	173	170	139	1244	624	0	1968	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1415	1767	1856	1804	1714	1689	1682	0	1689	1572
Q Serve(g_s), s	8.7	8.9	10.6	11.6	11.9	12.0	5.3	0.0	0.0	0.0	21.6	0.0
Cycle Q Clear(g_c), s	8.7	8.9	10.6	11.6	11.9	12.0	5.3	0.0	0.0	0.0	21.6	0.0
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.50	0.00		1.00
Lane Grp Cap(c), veh/h	386	811	309	196	206	200	140	1805	899	0	2291	
V/C Ratio(X)	0.36	0.37	0.43	0.82	0.84	0.85	0.99	0.69	0.69	0.00	0.86	
Avail Cap(c_a), veh/h	489	1028	392	245	257	250	140	1805	899	0	2291	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	0.72	0.72	0.72	0.00	0.85	0.00
Uniform Delay (d), s/veh	43.1	43.2	43.9	56.5	56.7	56.7	59.7	0.0	0.0	0.0	4.4	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.4	12.7	14.3	16.0	62.9	1.6	3.2	0.0	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	4.1	3.8	5.9	6.4	6.4	3.4	0.4	0.8	0.0	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	43.3	44.2	69.2	71.0	72.7	122.5	1.6	3.2	0.0	8.3	0.0
LnGrp LOS	D	D	D	E	E	E	F	A	A	A	A	
Approach Vol, veh/h		574			504			2007			1968	A
Approach Delay, s/veh		43.5			71.0			10.5			8.3	
Approach LOS		D			E			B			A	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		75.4		34.3	10.7	64.7		20.3
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		58.3		36.0	5.3	47.6		18.0
Max Q Clear Time (g_c+I1), s		2.0		12.6	7.3	23.6		14.0
Green Ext Time (p_c), s		6.2		0.8	0.0	7.0		0.4

Intersection Summary		
HCM 6th Ctrl Delay		19.4
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

12: Rosecrans St & Midway Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	233	130	106	346	219	160	1417	100	267	1515	146
Future Volume (veh/h)	233	233	130	106	346	219	160	1417	100	267	1515	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	243	243	135	110	360	228	167	1476	104	278	1578	152
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	293	720	309	133	671	283	217	1621	114	792	2381	229
Arrive On Green	0.09	0.20	0.20	0.08	0.19	0.19	0.06	0.34	0.34	0.46	1.00	1.00
Sat Flow, veh/h	3428	3526	1514	1767	3526	1488	3428	4821	340	3428	4688	451
Grp Volume(v), veh/h	243	243	135	110	360	228	167	1034	546	278	1136	594
Grp Sat Flow(s),veh/h/ln	1714	1763	1514	1767	1763	1488	1714	1689	1783	1714	1689	1762
Q Serve(g_s), s	9.1	7.7	10.1	8.0	12.0	19.1	6.2	38.1	38.1	6.8	0.0	0.0
Cycle Q Clear(g_c), s	9.1	7.7	10.1	8.0	12.0	19.1	6.2	38.1	38.1	6.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.26
Lane Grp Cap(c), veh/h	293	720	309	133	671	283	217	1136	600	792	1715	895
V/C Ratio(X)	0.83	0.34	0.44	0.83	0.54	0.81	0.77	0.91	0.91	0.35	0.66	0.66
Avail Cap(c_a), veh/h	359	881	379	171	854	360	282	1343	709	792	1715	895
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.50	0.50	0.50
Uniform Delay (d), s/veh	58.5	44.2	45.2	59.3	47.5	50.3	59.9	41.3	41.3	28.7	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.1	0.4	17.8	0.2	7.8	4.4	8.9	15.0	0.0	1.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.4	3.9	4.2	5.3	7.7	2.8	16.9	18.9	2.5	0.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	44.3	45.6	77.1	47.7	58.2	64.3	50.1	56.2	28.8	1.0	2.0
LnGrp LOS	E	D	D	E	D	E	E	D	E	C	A	A
Approach Vol, veh/h		621			698			1747			2008	
Approach Delay, s/veh		54.3			55.8			53.4			5.1	
Approach LOS		D			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.7	48.6	14.2	31.4	12.6	71.7	16.0	29.6
Change Period (Y+Rc), s	5.7	* 4.9	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	14.6	* 52	12.6	32.5	10.7	54.8	13.6	* 32
Max Q Clear Time (g_c+I1), s	8.8	40.1	10.0	12.1	8.2	2.0	11.1	21.1
Green Ext Time (p_c), s	0.1	3.6	0.0	0.6	0.0	5.3	0.1	0.9

Intersection Summary		
HCM 6th Ctrl Delay		34.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	323	10	638	346	110	10	1097	521	120	1532	239
Future Volume (veh/h)	380	323	10	638	346	110	10	1097	521	120	1532	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	388	330	10	651	353	112	10	1119	532	122	1563	244
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	307	382	12	612	397	325	21	2074	628	169	1577	676
Arrive On Green	0.17	0.21	0.21	0.18	0.21	0.21	0.01	0.41	0.41	0.10	0.89	0.89
Sat Flow, veh/h	1767	1789	54	3428	1856	1516	1767	5066	1534	3428	3526	1511
Grp Volume(v), veh/h	388	0	340	651	353	112	10	1119	532	122	1563	244
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1714	1856	1516	1767	1689	1534	1714	1763	1511
Q Serve(g_s), s	22.6	0.0	23.1	23.2	24.0	6.9	0.7	21.8	40.8	4.5	53.6	1.8
Cycle Q Clear(g_c), s	22.6	0.0	23.1	23.2	24.0	6.9	0.7	21.8	40.8	4.5	53.6	1.8
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	393	612	397	325	21	2074	628	169	1577	676
V/C Ratio(X)	1.26	0.00	0.86	1.06	0.89	0.34	0.49	0.54	0.85	0.72	0.99	0.36
Avail Cap(c_a), veh/h	307	0	474	612	485	397	69	2074	628	232	1577	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	53.7	0.0	49.3	53.4	49.6	31.0	63.9	29.1	34.7	57.7	6.6	1.1
Incr Delay (d2), s/veh	141.8	0.0	11.8	52.6	12.8	0.2	6.4	1.0	13.3	2.4	17.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	0.0	11.9	14.4	12.5	2.6	0.4	8.9	17.3	1.9	6.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	195.5	0.0	61.1	106.0	62.3	31.2	70.3	30.1	48.0	60.1	23.7	2.2
LnGrp LOS	F	A	E	F	E	C	E	C	D	E	C	A
Approach Vol, veh/h		728			1116			1661			1929	
Approach Delay, s/veh		132.7			84.7			36.1			23.3	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	58.9	27.6	32.6	5.9	63.8	27.5	32.7
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	8.8	* 46	23.2	33.4	5.1	48.9	22.6	* 34
Max Q Clear Time (g_c+I1), s	6.5	42.8	25.2	25.1	2.7	55.6	24.6	26.0
Green Ext Time (p_c), s	0.0	1.3	0.0	0.5	0.0	0.0	0.0	0.6

Intersection Summary		
HCM 6th Ctrl Delay		54.5
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	744	190	590	914	80	160
Future Volume (veh/h)	744	190	590	914	80	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	783	200	621	962	84	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	897	229	560	2424	106	212
Arrive On Green	0.33	0.33	0.32	0.69	0.20	0.20
Sat Flow, veh/h	2842	702	1767	3618	535	1070
Grp Volume(v), veh/h	502	481	621	962	253	0
Grp Sat Flow(s),veh/h/ln	1763	1689	1767	1763	1611	0
Q Serve(g_s), s	24.1	24.1	28.5	10.6	13.4	0.0
Cycle Q Clear(g_c), s	24.1	24.1	28.5	10.6	13.4	0.0
Prop In Lane		0.42	1.00		0.33	0.66
Lane Grp Cap(c), veh/h	575	551	560	2424	319	0
V/C Ratio(X)	0.87	0.87	1.11	0.40	0.79	0.00
Avail Cap(c_a), veh/h	575	551	560	2424	447	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.5	28.5	30.7	6.0	34.3	0.0
Incr Delay (d2), s/veh	12.6	13.1	71.8	0.5	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	11.4	22.8	3.4	5.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	41.6	102.5	6.5	38.5	0.0
LnGrp LOS	D	D	F	A	D	A
Approach Vol, veh/h	983			1583	253	
Approach Delay, s/veh	41.4			44.2	38.5	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	32.5	34.8				67.3		22.7
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	28.5	* 23				54.7		25.0
Max Q Clear Time (g_c+I1), s	30.5	26.1				12.6		15.4
Green Ext Time (p_c), s	0.0	0.0				8.7		0.3

Intersection Summary			
HCM 6th Ctrl Delay			42.7
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	236	640	20	0	608
Future Vol, veh/h	0	236	640	20	0	608
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	271	736	23	0	699

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	400	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	597	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	586	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	586	-
HCM Lane V/C Ratio	-	-	0.463	-
HCM Control Delay (s)	-	-	16.3	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	2.4	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	914	1406	650	529	78
Future Volume (veh/h)	0	914	1406	650	529	78
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	933	1435	663	540	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1883	1883	1165	775	
Arrive On Green	0.00	0.53	0.53	0.53	0.23	0.00
Sat Flow, veh/h	0	3711	3618	1516	3428	1572
Grp Volume(v), veh/h	0	933	1435	663	540	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1516	1714	1572
Q Serve(g_s), s	0.0	7.4	14.1	8.2	6.4	0.0
Cycle Q Clear(g_c), s	0.0	7.4	14.1	8.2	6.4	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1883	1883	1165	775	
V/C Ratio(X)	0.00	0.50	0.76	0.57	0.70	
Avail Cap(c_a), veh/h	0	2027	2027	1227	1863	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	8.1	2.3	15.7	0.0
Incr Delay (d2), s/veh	0.0	0.2	1.6	0.6	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	3.9	3.5	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.7	9.7	2.8	16.6	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		933	2098		540	A
Approach Delay, s/veh		6.7	7.5		16.6	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		29.0		15.2		29.0
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		9.4		8.4		16.1
Green Ext Time (p_c), s		5.9		1.4		7.5

Intersection Summary						
HCM 6th Ctrl Delay			8.7			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	30	30	0	40	100	698	40	120	498	110
Future Volume (veh/h)	20	0	30	30	0	40	100	698	40	120	498	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	24	0	35	35	0	47	118	821	47	141	586	129
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	190	38	141	412	0	238	150	1747	100	180	1550	333
Arrive On Green	0.16	0.00	0.16	0.16	0.00	0.16	0.08	0.36	0.36	0.10	0.37	0.37
Sat Flow, veh/h	368	242	890	1340	0	1503	1767	4889	279	1767	4137	889
Grp Volume(v), veh/h	59	0	0	35	0	47	118	566	302	141	476	239
Grp Sat Flow(s),veh/h/ln	1500	0	0	1340	0	1503	1767	1689	1790	1767	1689	1649
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	2.5	5.0	5.0	3.0	3.9	4.1
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.7	0.0	1.0	2.5	5.0	5.0	3.0	3.9	4.1
Prop In Lane	0.41		0.59	1.00		1.00	1.00		0.16	1.00		0.54
Lane Grp Cap(c), veh/h	369	0	0	412	0	238	150	1207	640	180	1265	618
V/C Ratio(X)	0.16	0.00	0.00	0.08	0.00	0.20	0.79	0.47	0.47	0.78	0.38	0.39
Avail Cap(c_a), veh/h	1329	0	0	1315	0	1250	308	1826	968	349	1896	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	0.0	13.9	0.0	14.1	17.3	9.5	9.6	16.9	8.8	8.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.1	3.5	0.4	0.7	2.8	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.2	0.0	0.3	1.0	1.4	1.6	1.2	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	0.0	0.0	13.9	0.0	14.2	20.7	9.9	10.3	19.7	9.0	9.3
LnGrp LOS	B	A	A	B	A	B	C	A	B	B	A	A
Approach Vol, veh/h		59			82			986			856	
Approach Delay, s/veh		14.2			14.1			11.3			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	19.1		11.0	7.7	19.8		11.0
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	7.6	* 21		32.0	6.7	21.6		32.0
Max Q Clear Time (g_c+I1), s	5.0	7.0		3.2	4.5	6.1		3.0
Green Ext Time (p_c), s	0.0	6.0		0.2	0.0	4.8		0.2

Intersection Summary		
HCM 6th Ctrl Delay		11.3
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	13.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	317	499	828	518	10
Future Vol, veh/h	0	317	499	828	518	10
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	352	554	920	576	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	314	597	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	579	606	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	568	600	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	17.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	600	-	568	-	-
HCM Lane V/C Ratio	0.924	-	0.62	-	-
HCM Control Delay (s)	46.7	-	21.1	-	-
HCM Lane LOS	E	-	C	-	-
HCM 95th %tile Q(veh)	11.9	-	4.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	93	0	1329	881	99
Future Vol, veh/h	0	93	0	1329	881	99
Conflicting Peds, #/hr	0	10	0	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	107	0	1528	1013	114

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	584	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	452	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	443	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	443	-	-
HCM Lane V/C Ratio	-	0.241	-	-
HCM Control Delay (s)	-	15.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	20	20	20	30	10	360	1300	260	116	686	162
Future Volume (veh/h)	23	20	20	20	30	10	360	1300	260	116	686	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.70	1.00		0.93	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	26	22	22	22	33	11	400	1444	289	129	762	180
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	34	632	536	31	628	371	279	1277	530	143	821	194
Arrive On Green	0.02	0.34	0.34	0.02	0.34	0.34	0.16	0.36	0.36	0.08	0.29	0.29
Sat Flow, veh/h	1767	1856	1572	1767	1856	1095	1767	3526	1462	1767	2798	661
Grp Volume(v), veh/h	26	22	22	22	33	11	400	1444	289	129	480	462
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1095	1767	1763	1462	1767	1763	1696
Q Serve(g_s), s	1.7	0.9	1.1	1.5	1.4	0.8	18.6	42.6	18.5	8.5	31.1	31.1
Cycle Q Clear(g_c), s	1.7	0.9	1.1	1.5	1.4	0.8	18.6	42.6	18.5	8.5	31.1	31.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	34	632	536	31	628	371	279	1277	530	143	517	498
V/C Ratio(X)	0.76	0.03	0.04	0.71	0.05	0.03	1.43	1.13	0.55	0.90	0.93	0.93
Avail Cap(c_a), veh/h	77	632	536	87	631	372	279	1277	530	143	523	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	25.9	25.9	57.5	26.2	26.0	49.5	37.5	29.8	53.6	40.4	40.4
Incr Delay (d2), s/veh	11.8	0.0	0.0	10.8	0.0	0.0	213.8	69.2	1.4	46.9	24.1	24.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.4	0.4	0.7	0.6	0.2	24.8	30.3	6.7	5.6	16.8	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	25.9	25.9	68.3	26.2	26.0	263.3	106.7	31.2	100.6	64.4	65.1
LnGrp LOS	E	C	C	E	C	C	F	F	C	F	E	E
Approach Vol, veh/h		70			66			2133			1071	
Approach Delay, s/veh		42.0			40.2			125.8			69.1	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	51.3	6.5	45.0	23.0	43.2	6.7	44.8
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	9.5	42.0	5.8	39.3	18.6	* 35	5.1	40.0
Max Q Clear Time (g_c+I1), s	10.5	44.6	3.5	3.1	20.6	33.1	3.7	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	1.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	104.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	392.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1429	1889	1920	626	100
Future Vol, veh/h	0	1429	1889	1920	626	100
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1553	2053	2087	680	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	360	799	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 634	~ 813	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 622	~ 805	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 694	$ 354.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 805	-	622	-	-
HCM Lane V/C Ratio	2.551	-	2.497	-	-
HCM Control Delay (s)	$ 714.5	-	$ 694	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	160.8	-	121.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	103	290	200	10	266	80	180	0	30	10
Future Volume (veh/h)	0	50	103	290	200	10	266	80	180	0	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	0.98		0.95	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	65	134	377	260	13	345	104	234	0	39	13
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	120	207	427	484	702	35	396	92	208	0	573	191
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	1097	515	1062	1153	1747	87	704	212	477	0	1316	439
Grp Volume(v), veh/h	0	0	199	377	0	273	683	0	0	0	0	52
Grp Sat Flow(s),veh/h/ln	1097	0	1577	1153	0	1834	1393	0	0	0	0	1755
Q Serve(g_s), s	0.0	0.0	5.2	18.9	0.0	6.3	25.1	0.0	0.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s	0.0	0.0	5.2	24.1	0.0	6.3	26.1	0.0	0.0	0.0	0.0	1.0
Prop In Lane	1.00		0.67	1.00		0.05	0.51		0.34	0.00		0.25
Lane Grp Cap(c), veh/h	120	0	633	484	0	737	696	0	0	0	0	763
V/C Ratio(X)	0.00	0.00	0.31	0.78	0.00	0.37	0.98	0.00	0.00	0.00	0.00	0.07
Avail Cap(c_a), veh/h	120	0	633	484	0	737	696	0	0	0	0	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	12.3	20.9	0.0	12.6	18.9	0.0	0.0	0.0	0.0	9.9
Incr Delay (d2), s/veh	0.0	0.0	0.5	8.1	0.0	0.3	29.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.7	5.9	0.0	2.3	14.4	0.0	0.0	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	12.8	28.9	0.0	13.0	48.0	0.0	0.0	0.0	0.0	9.9
LnGrp LOS	A	A	B	C	A	B	D	A	A	A	A	A
Approach Vol, veh/h		199			650			683			52	
Approach Delay, s/veh		12.8			22.2			48.0			9.9	
Approach LOS		B			C			D			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		31.0		29.0		31.0				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		24.1		26.1		24.1		26.1				
Max Q Clear Time (g_c+I1), s		7.2		3.0		26.1		28.1				
Green Ext Time (p_c), s		1.6		0.1		0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			31.8
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	30	270	270	254	376	40	0	213	260
Future Volume (veh/h)	0	0	10	30	270	270	254	376	40	0	213	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	12	37	333	333	314	464	49	0	263	321
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	0	569	93	299	284	165	115	11	0	330	403
Arrive On Green	0.00	0.00	0.36	0.36	0.36	0.36	0.44	0.44	0.44	0.00	0.44	0.44
Sat Flow, veh/h	0	0	1572	47	825	785	149	260	26	0	747	912
Grp Volume(v), veh/h	0	0	12	703	0	0	827	0	0	0	0	584
Grp Sat Flow(s),veh/h/ln	0	0	1572	1656	0	0	435	0	0	0	0	1659
Q Serve(g_s), s	0.0	0.0	0.2	9.8	0.0	0.0	6.9	0.0	0.0	0.0	0.0	15.2
Cycle Q Clear(g_c), s	0.0	0.0	0.2	18.1	0.0	0.0	22.1	0.0	0.0	0.0	0.0	15.2
Prop In Lane	0.00		1.00	0.05		0.47	0.38		0.06	0.00		0.55
Lane Grp Cap(c), veh/h	0	0	569	675	0	0	291	0	0	0	0	733
V/C Ratio(X)	0.00	0.00	0.02	1.04	0.00	0.00	2.84	0.00	0.00	0.00	0.00	0.80
Avail Cap(c_a), veh/h	0	0	569	675	0	0	291	0	0	0	0	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	10.3	16.9	0.0	0.0	21.5	0.0	0.0	0.0	0.0	12.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	45.7	0.0	0.0	836.3	0.0	0.0	0.0	0.0	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	15.4	0.0	0.0	70.9	0.0	0.0	0.0	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	10.3	62.6	0.0	0.0	857.8	0.0	0.0	0.0	0.0	17.7
LnGrp LOS	A	A	B	F	A	A	F	A	A	A	A	B
Approach Vol, veh/h		12			703			827			584	
Approach Delay, s/veh		10.3			62.6			857.8			17.7	
Approach LOS		B			E			F			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0	23.0
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	22.1	18.1	22.1	18.1
Max Q Clear Time (g_c+I1), s	24.1	2.2	17.2	20.1
Green Ext Time (p_c), s	0.0	0.0	1.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	359.3
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	76.3
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	350	741	0	245	63	0
Future Vol, veh/h	350	741	0	245	63	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	417	882	0	292	75	0
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	93.9	14.9	10.7
HCM LOS	F	B	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	350	741	63
LT Vol	0	350	0	0
Through Vol	245	0	0	63
RT Vol	0	0	741	0
Lane Flow Rate	292	417	882	75
Geometry Grp	2	7	7	2
Degree of Util (X)	0.484	0.714	1.215	0.133
Departure Headway (Hd)	6.194	6.169	4.958	6.656
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	586	583	732	542
Service Time	4.194	3.923	2.712	4.656
HCM Lane V/C Ratio	0.498	0.715	1.205	0.138
HCM Control Delay	14.9	22.9	127.4	10.7
HCM Lane LOS	B	C	F	B
HCM 95th-tile Q	2.6	5.8	30.2	0.5

Intersection	
Intersection Delay, s/veh	37.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	210	629	13	30	0	220	0	96	0	0	0
Future Vol, veh/h	0	210	629	13	30	0	220	0	96	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	239	715	15	34	0	250	0	109	0	0	0
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	46.1	10	17.2	0
HCM LOS	E	A	C	-

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	70%	0%	0%	30%	0%
Vol Thru, %	0%	100%	0%	70%	100%
Vol Right, %	30%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	316	210	629	43	0
LT Vol	220	0	0	13	0
Through Vol	0	210	0	30	0
RT Vol	96	0	629	0	0
Lane Flow Rate	359	239	715	49	0
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.592	0.383	1.007	0.086	0
Departure Headway (Hd)	5.93	5.781	5.072	6.336	6.794
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	610	623	715	565	0
Service Time	3.956	3.509	2.801	4.381	4.843
HCM Lane V/C Ratio	0.589	0.384	1	0.087	0
HCM Control Delay	17.2	12.1	57.5	10	9.8
HCM Lane LOS	C	B	F	A	N
HCM 95th-tile Q	3.9	1.8	16.6	0.3	0

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	90	70	256	220	422
Future Vol, veh/h	60	90	70	256	220	422
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	63	94	73	267	229	440
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.5	13.5	25.3
HCM LOS	B	B	D

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	21%	100%	0%	0%
Vol Thru, %	79%	0%	0%	34%
Vol Right, %	0%	0%	100%	66%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	326	60	90	642
LT Vol	70	60	0	0
Through Vol	256	0	0	220
RT Vol	0	0	90	422
Lane Flow Rate	340	62	94	669
Geometry Grp	2	7	7	2
Degree of Util (X)	0.499	0.128	0.16	0.827
Departure Headway (Hd)	5.291	7.368	6.144	4.452
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	683	489	586	803
Service Time	3.305	5.082	3.858	2.55
HCM Lane V/C Ratio	0.498	0.127	0.16	0.833
HCM Control Delay	13.5	11.2	10	25.3
HCM Lane LOS	B	B	A	D
HCM 95th-tile Q	2.8	0.4	0.6	9.3

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	4	256	0	70	30	20	290	0
Future Vol, veh/h	0	0	0	10	4	256	0	70	30	20	290	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	11	4	288	0	79	34	22	326	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	10.3	8.8	12.4
HCM LOS	-	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	4%	6%
Vol Thru, %	100%	0%	100%	1%	94%
Vol Right, %	0%	100%	0%	95%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	30	0	270	310
LT Vol	0	0	0	10	20
Through Vol	70	0	0	4	290
RT Vol	0	30	0	256	0
Lane Flow Rate	79	34	0	303	348
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.122	0.046	0	0.38	0.475
Departure Headway (Hd)	5.606	4.898	5.495	4.514	4.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	634	723	0	792	728
Service Time	3.392	2.684	3.59	2.566	2.981
HCM Lane V/C Ratio	0.125	0.047	0	0.383	0.478
HCM Control Delay	9.2	7.9	8.6	10.3	12.4
HCM Lane LOS	A	A	N	B	B
HCM 95th-tile Q	0.4	0.1	0	1.8	2.6

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	116	110	100	0	0	0	60	40	100	240	110	3
Future Vol, veh/h	116	110	100	0	0	0	60	40	100	240	110	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	121	115	104	0	0	0	63	42	104	250	115	3
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.8	10.6	14.7
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	30%	36%	68%
Vol Thru, %	20%	34%	31%
Vol Right, %	50%	31%	1%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	200	326	353
LT Vol	60	116	240
Through Vol	40	110	110
RT Vol	100	100	3
Lane Flow Rate	208	340	368
Geometry Grp	1	1	1
Degree of Util (X)	0.303	0.505	0.548
Departure Headway (Hd)	5.242	5.354	5.367
Convergence, Y/N	Yes	Yes	Yes
Cap	685	672	673
Service Time	3.278	3.386	3.398
HCM Lane V/C Ratio	0.304	0.506	0.547
HCM Control Delay	10.6	13.8	14.7
HCM Lane LOS	B	B	B
HCM 95th-tile Q	1.3	2.9	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰↰	↑↑			↑↑	↱
Traffic Volume (veh/h)	0	0	0	150	290	60	200	651	0	0	767	600
Future Volume (veh/h)	0	0	0	150	290	60	200	651	0	0	767	600
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				158	305	63	211	685	0	0	807	632
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				253	533	109	742	2505	0	0	1536	668
Arrive On Green				0.17	0.17	0.17	0.43	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1463	3081	630	3428	3618	0	0	3618	1533
Grp Volume(v), veh/h				192	163	170	211	685	0	0	807	632
Grp Sat Flow(s),veh/h/ln				1782	1689	1703	1714	1763	0	0	1763	1533
Q Serve(g_s), s				8.4	7.4	7.7	3.3	0.0	0.0	0.0	14.1	33.3
Cycle Q Clear(g_c), s				8.4	7.4	7.7	3.3	0.0	0.0	0.0	14.1	33.3
Prop In Lane				0.82		0.37	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				308	292	295	742	2505	0	0	1536	668
V/C Ratio(X)				0.62	0.56	0.58	0.28	0.27	0.00	0.00	0.53	0.95
Avail Cap(c_a), veh/h				554	525	529	742	2505	0	0	1557	677
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.89	0.89	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.2	31.8	31.9	19.6	0.0	0.0	0.0	17.4	22.8
Incr Delay (d2), s/veh				0.8	0.6	0.7	0.2	0.2	0.0	0.0	1.3	23.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	3.0	3.2	1.2	0.1	0.0	0.0	5.7	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.0	32.4	32.6	19.8	0.2	0.0	0.0	18.6	46.7
LnGrp LOS				C	C	C	B	A	A	A	B	D
Approach Vol, veh/h					526			896			1439	
Approach Delay, s/veh					32.7			4.8			31.0	
Approach LOS					C			A			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.6			23.1	41.5		19.4				
Change Period (Y+Rc), s		4.9			4.9	* 4.9		4.9				
Max Green Setting (Gmax), s		48.1			6.6	* 37		26.1				
Max Q Clear Time (g_c+I1), s		2.0			5.3	35.3		10.4				
Green Ext Time (p_c), s		6.8			0.1	1.3		1.9				

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↑	↱					↑↑	↱	↰↰	↑↑	
Traffic Volume (veh/h)	480	280	180	0	0	0	0	371	130	410	507	0
Future Volume (veh/h)	480	280	180	0	0	0	0	371	130	410	507	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	495	289	186				0	382	134	423	523	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	773	406	261				0	1308	569	509	1876	0
Arrive On Green	0.22	0.22	0.22				0.00	0.46	0.46	0.15	0.66	0.00
Sat Flow, veh/h	3534	1856	1194				0	2897	1227	3428	2897	0
Grp Volume(v), veh/h	495	289	186				0	382	134	423	523	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1194				0	1411	1227	1714	1411	0
Q Serve(g_s), s	10.7	12.1	12.1				0.0	7.1	5.5	10.1	6.4	0.0
Cycle Q Clear(g_c), s	10.7	12.1	12.1				0.0	7.1	5.5	10.1	6.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	773	406	261				0	1308	569	509	1876	0
V/C Ratio(X)	0.64	0.71	0.71				0.00	0.29	0.24	0.83	0.28	0.00
Avail Cap(c_a), veh/h	1140	599	385				0	1308	569	678	1876	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.99	0.99	0.91	0.91	0.00
Uniform Delay (d), s/veh	29.8	30.4	30.4				0.0	14.0	13.6	34.7	5.8	0.0
Incr Delay (d2), s/veh	0.3	0.9	1.4				0.0	0.6	1.0	4.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.4	3.5				0.0	2.2	1.6	4.4	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	31.2	31.7				0.0	14.5	14.5	39.3	6.1	0.0
LnGrp LOS	C	C	C				A	B	B	D	A	A
Approach Vol, veh/h		970						516			946	
Approach Delay, s/veh		30.8						14.5			21.0	
Approach LOS		C						B			C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.9	43.8		23.3		60.7						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	16.6	26.1		27.1		47.1						
Max Q Clear Time (g_c+I1), s	12.7	9.1		14.1		8.4						
Green Ext Time (p_c), s	0.4	3.3		2.2		4.5						

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	40	40	30	100	90	381	0	0	580	107
Future Volume (veh/h)	20	0	40	40	30	100	90	381	0	0	580	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	21	0	42	42	31	104	94	397	0	0	604	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	25	0	50	285	299	237	120	1427	0	0	989	427
Arrive On Green	0.05	0.00	0.05	0.16	0.16	0.16	0.07	0.51	0.00	0.00	0.35	0.35
Sat Flow, veh/h	537	0	1075	1767	1856	1473	1767	2897	0	0	2897	1219
Grp Volume(v), veh/h	63	0	0	42	31	104	94	397	0	0	604	111
Grp Sat Flow(s),veh/h/ln	1612	0	0	1767	1856	1473	1767	1411	0	0	1411	1219
Q Serve(g_s), s	2.0	0.0	0.0	1.1	0.7	3.3	2.7	4.2	0.0	0.0	9.1	3.4
Cycle Q Clear(g_c), s	2.0	0.0	0.0	1.1	0.7	3.3	2.7	4.2	0.0	0.0	9.1	3.4
Prop In Lane	0.33		0.67	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	74	0	0	285	299	237	120	1427	0	0	989	427
V/C Ratio(X)	0.85	0.00	0.00	0.15	0.10	0.44	0.78	0.28	0.00	0.00	0.61	0.26
Avail Cap(c_a), veh/h	125	0	0	891	936	743	233	2496	0	0	1856	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	18.6	18.5	19.5	23.6	7.3	0.0	0.0	13.8	12.0
Incr Delay (d2), s/veh	10.2	0.0	0.0	0.1	0.1	0.5	12.4	0.0	0.0	0.0	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.4	0.3	1.1	1.5	1.0	0.0	0.0	2.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	0.0	0.0	18.7	18.5	20.0	36.0	7.4	0.0	0.0	14.6	12.4
LnGrp LOS	C	A	A	B	B	B	D	A	A	A	B	B
Approach Vol, veh/h		63			177			491			715	
Approach Delay, s/veh		34.6			19.4			12.9			14.2	
Approach LOS		C			B			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		30.5		6.4	8.0	22.5		14.7				
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4				
Max Green Setting (Gmax), s		* 46		4.0	6.8	33.9		26.0				
Max Q Clear Time (g_c+I1), s		6.2		4.0	4.7	11.1		5.3				
Green Ext Time (p_c), s		1.9		0.0	0.0	5.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			15.3									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	40	60	0	0	0	0	250	30	120	200	0
Future Volume (veh/h)	221	40	60	0	0	0	0	250	30	120	200	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	277	0	67				0	278	33	133	222	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1040	0	707				0	516	60	250	478	0
Arrive On Green	0.29	0.00	0.29				0.00	0.16	0.16	0.14	0.14	0.00
Sat Flow, veh/h	3534	0	1526				0	3242	369	1767	3544	0
Grp Volume(v), veh/h	277	0	67				0	154	157	133	222	0
Grp Sat Flow(s),veh/h/ln	1767	0	1526				0	1763	1756	1767	1689	0
Q Serve(g_s), s	2.2	0.0	0.9				0.0	2.9	3.0	2.5	2.2	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.9				0.0	2.9	3.0	2.5	2.2	0.0
Prop In Lane	1.00		1.00				0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	1040	0	707				0	289	288	250	478	0
V/C Ratio(X)	0.27	0.00	0.09				0.00	0.53	0.55	0.53	0.46	0.00
Avail Cap(c_a), veh/h	2860	0	1493				0	682	679	351	671	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.8	0.0	5.6				0.0	13.9	13.9	14.4	14.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0				0.0	0.6	0.6	2.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3				0.0	1.0	1.0	1.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	0.0	5.6				0.0	14.4	14.5	16.4	15.1	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		344						311			355	
Approach Delay, s/veh		9.0						14.5			15.6	
Approach LOS		A						B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				9.9		16.9		9.4				
Change Period (Y+Rc), s				4.0		6.2		4.3				
Max Green Setting (Gmax), s				14.0		29.3		7.2				
Max Q Clear Time (g_c+I1), s				5.0		4.2		4.5				
Green Ext Time (p_c), s				0.8		0.6		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↱		↰	↑↑↱		↰	↑↑↱	
Traffic Volume (veh/h)	80	140	70	290	440	103	170	274	60	66	305	100
Future Volume (veh/h)	80	140	70	290	440	103	170	274	60	66	305	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	92	161	80	333	506	118	195	315	69	76	351	115
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	107	561	559	202	531	124	139	862	179	91	725	223
Arrive On Green	0.06	0.37	0.37	0.14	0.44	0.44	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	1767	1537	1532	1464	1199	280	1767	4150	861	1464	3786	1162
Grp Volume(v), veh/h	92	161	80	333	0	624	195	253	131	76	311	155
Grp Sat Flow(s),veh/h/ln	1767	1537	1532	1464	0	1479	1767	1689	1635	1464	1689	1571
Q Serve(g_s), s	4.3	6.2	2.9	11.6	0.0	34.1	6.6	5.4	5.8	4.3	6.9	7.5
Cycle Q Clear(g_c), s	4.3	6.2	2.9	11.6	0.0	34.1	6.6	5.4	5.8	4.3	6.9	7.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.53	1.00		0.74
Lane Grp Cap(c), veh/h	107	561	559	202	0	654	139	702	340	91	647	301
V/C Ratio(X)	0.86	0.29	0.14	1.65	0.00	0.95	1.40	0.36	0.39	0.83	0.48	0.52
Avail Cap(c_a), veh/h	107	586	584	202	0	679	139	1179	571	141	1240	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	18.9	17.8	36.1	0.0	22.6	38.6	28.5	28.6	38.9	30.2	30.4
Incr Delay (d2), s/veh	43.8	0.1	0.0	311.4	0.0	23.3	218.6	0.6	1.3	12.4	1.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	2.2	1.0	21.5	0.0	15.1	11.2	2.2	2.3	1.8	2.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.9	19.0	17.9	347.6	0.0	45.9	257.2	29.0	30.0	51.3	31.2	32.9
LnGrp LOS	F	B	B	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		333			957			579			542	
Approach Delay, s/veh		36.4			150.9			106.1			34.5	
Approach LOS		D			F			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	22.7	16.0	35.5	11.0	21.4	9.5	42.0
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	8.1	29.3	11.6	32.0	6.6	30.8	5.1	38.5
Max Q Clear Time (g_c+I1), s	6.3	7.8	13.6	8.2	8.6	9.5	6.3	36.1
Green Ext Time (p_c), s	0.0	4.0	0.0	0.7	0.0	4.9	0.0	1.0

Intersection Summary		
HCM 6th Ctrl Delay		98.1
HCM 6th LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↑	↱
Traffic Volume (veh/h)	357	850	60	60	1010	80	170	277	70	90	192	632
Future Volume (veh/h)	357	850	60	60	1010	80	170	277	70	90	192	632
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	364	867	61	61	1031	82	173	283	71	92	196	645
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	384	1660	117	78	1070	85	134	1037	246	113	1236	713
Arrive On Green	0.22	0.50	0.50	0.04	0.32	0.32	0.08	0.26	0.26	0.06	0.24	0.24
Sat Flow, veh/h	1767	3335	235	1767	3300	262	1767	4059	963	1767	5066	1521
Grp Volume(v), veh/h	364	458	470	61	551	562	173	233	121	92	196	645
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1799	1767	1689	1645	1767	1689	1521
Q Serve(g_s), s	28.4	24.7	24.7	4.8	43.0	43.0	10.6	7.7	8.3	7.2	4.3	34.1
Cycle Q Clear(g_c), s	28.4	24.7	24.7	4.8	43.0	43.0	10.6	7.7	8.3	7.2	4.3	34.1
Prop In Lane	1.00		0.13	1.00		0.15	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	384	877	899	78	572	584	134	863	420	113	1236	713
V/C Ratio(X)	0.95	0.52	0.52	0.78	0.96	0.96	1.29	0.27	0.29	0.81	0.16	0.90
Avail Cap(c_a), veh/h	386	877	899	121	575	587	134	863	420	172	1236	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	23.9	23.9	66.3	46.5	46.5	64.7	41.7	41.9	64.7	41.6	35.1
Incr Delay (d2), s/veh	32.4	0.8	0.8	6.8	28.1	27.9	176.2	0.8	1.7	9.1	0.3	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	10.5	10.8	2.3	23.2	23.6	11.3	3.4	3.6	3.5	1.8	23.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.3	24.7	24.6	73.1	74.6	74.4	240.9	42.4	43.6	73.8	41.9	52.3
LnGrp LOS	F	C	C	E	E	E	F	D	D	E	D	D
Approach Vol, veh/h		1292			1174			527			933	
Approach Delay, s/veh		42.0			74.4			107.9			52.2	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	41.1	10.6	75.0	15.0	39.4	34.8	50.7
Change Period (Y+Rc), s	4.4	* 5.3	4.4	5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	13.6	* 31	9.6	66.7	10.6	33.7	30.6	45.7
Max Q Clear Time (g_c+I1), s	9.2	10.3	6.8	26.7	12.6	36.1	30.4	45.0
Green Ext Time (p_c), s	0.0	2.7	0.0	11.7	0.0	0.0	0.0	0.4

Intersection Summary		
HCM 6th Ctrl Delay		63.0
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1043	1950	2260	63	56	70
Future Volume (veh/h)	1043	1950	2260	63	56	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1122	2097	2430	0	60	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	834	4288	2867		114	102
Arrive On Green	0.24	0.85	0.57	0.00	0.06	0.06
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1122	2097	2430	0	60	75
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	28.7	12.8	47.2	0.0	3.9	5.5
Cycle Q Clear(g_c), s	28.7	12.8	47.2	0.0	3.9	5.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	834	4288	2867		114	102
V/C Ratio(X)	1.35	0.49	0.85		0.53	0.74
Avail Cap(c_a), veh/h	834	4288	2867		449	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	2.4	21.4	0.0	53.4	54.2
Incr Delay (d2), s/veh	163.5	0.4	3.3	0.0	1.4	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	81.0	2.7	18.6	0.0	1.8	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	208.2	2.8	24.7	0.0	54.8	58.1
LnGrp LOS	F	A	C		D	E
Approach Vol, veh/h		3219	2430	A	135	
Approach Delay, s/veh		74.4	24.7		56.7	
Approach LOS		E	C		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		105.2		12.8	33.1	72.1
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		77.5		30.0	28.7	* 45
Max Q Clear Time (g_c+I1), s		14.8		7.5	30.7	49.2
Green Ext Time (p_c), s		58.3		0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	53	100	95	126	121	240	1070	74	167	730	200
Future Volume (veh/h)	80	53	100	95	126	121	240	1070	74	167	730	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	83	55	104	99	131	126	250	1115	77	174	760	208
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	216	172	105	240	189	350	1369	94	217	1517	749
Arrive On Green	0.05	0.12	0.12	0.06	0.13	0.13	0.10	0.41	0.41	0.12	0.43	0.43
Sat Flow, veh/h	3428	1856	1478	1767	1856	1463	3428	3340	231	1767	3526	1570
Grp Volume(v), veh/h	83	55	104	99	131	126	250	588	604	174	760	208
Grp Sat Flow(s),veh/h/ln	1714	1856	1478	1767	1856	1463	1714	1763	1808	1767	1763	1570
Q Serve(g_s), s	1.6	1.8	4.5	3.8	4.4	5.5	4.7	19.9	19.9	6.4	10.5	5.4
Cycle Q Clear(g_c), s	1.6	1.8	4.5	3.8	4.4	5.5	4.7	19.9	19.9	6.4	10.5	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	161	216	172	105	240	189	350	723	741	217	1517	749
V/C Ratio(X)	0.52	0.25	0.60	0.94	0.55	0.67	0.71	0.81	0.81	0.80	0.50	0.28
Avail Cap(c_a), veh/h	245	855	681	105	822	648	566	781	801	420	1824	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	27.0	28.2	31.5	27.4	27.9	29.2	17.6	17.6	28.7	13.9	10.6
Incr Delay (d2), s/veh	1.0	0.6	3.4	68.5	0.7	1.5	1.0	6.9	6.8	2.6	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	1.6	3.5	1.8	1.8	1.9	8.1	8.3	2.7	3.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	27.7	31.6	100.0	28.2	29.4	30.3	24.4	24.3	31.4	14.3	10.9
LnGrp LOS	C	C	C	F	C	C	C	C	C	C	B	B
Approach Vol, veh/h		242			356			1442			1142	
Approach Delay, s/veh		30.9			48.6			25.4			16.3	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	32.9	8.4	13.3	11.3	34.2	7.6	14.2
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5
Max Green Setting (Gmax), s	16.0	29.8	4.0	* 31	11.1	* 35	4.8	29.8
Max Q Clear Time (g_c+I1), s	8.4	21.9	5.8	6.5	6.7	12.5	3.6	7.5
Green Ext Time (p_c), s	0.1	5.6	0.0	0.6	0.2	8.7	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1171	70	300	323	0	0	0	0	180	0	734
Future Volume (veh/h)	0	1171	70	300	323	0	0	0	0	180	0	734
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1273	76	326	351	0				196	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1441	629	903	2605	0				235	0	
Arrive On Green	0.00	0.41	0.41	0.53	1.00	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3618	1540	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1273	76	326	351	0				196	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1540	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	25.1	2.3	4.2	0.0	0.0				8.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	25.1	2.3	4.2	0.0	0.0				8.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1441	629	903	2605	0				235	0	
V/C Ratio(X)	0.00	0.88	0.12	0.36	0.13	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	1608	702	903	2605	0				372	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.48	0.48	0.74	0.74	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.5	13.8	14.1	0.0	0.0				31.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.2	0.2	0.2	0.1	0.0				4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.8	0.7	1.4	0.0	0.0				3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.7	14.0	14.2	0.1	0.0				36.3	0.0	0.0
LnGrp LOS	A	C	B	B	A	A				D	A	
Approach Vol, veh/h		1349			677						196	A
Approach Delay, s/veh		24.1			6.9						36.3	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	24.8	35.7		14.6		60.4		
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0		
Max Green Setting (Gmax), s	11.2	* 34		15.8		49.6		
Max Q Clear Time (g_c+I1), s	6.2	27.1		10.1		2.0		
Green Ext Time (p_c), s	0.5	3.6		0.0		1.5		

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	865	486	0	0	423	270	260	10	380	0	0	0
Future Volume (veh/h)	865	486	0	0	423	270	260	10	380	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	901	506	0	0	441	281	271	10	396			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1091	2299	0	0	530	334	364	13	335			
Arrive On Green	0.53	1.00	0.00	0.00	0.26	0.26	0.21	0.21	0.21			
Sat Flow, veh/h	3428	3618	0	0	2126	1283	1707	63	1572			
Grp Volume(v), veh/h	901	506	0	0	382	340	281	0	396			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1553	1770	0	1572			
Q Serve(g_s), s	16.5	0.0	0.0	0.0	15.3	15.5	11.1	0.0	16.0			
Cycle Q Clear(g_c), s	16.5	0.0	0.0	0.0	15.3	15.5	11.1	0.0	16.0			
Prop In Lane	1.00		0.00	0.00		0.83	0.96		1.00			
Lane Grp Cap(c), veh/h	1091	2299	0	0	459	405	378	0	335			
V/C Ratio(X)	0.83	0.22	0.00	0.00	0.83	0.84	0.74	0.00	1.18			
Avail Cap(c_a), veh/h	1091	2299	0	0	541	476	378	0	335			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.50	0.50	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.8	0.0	0.0	0.0	26.2	26.3	27.6	0.0	29.5			
Incr Delay (d2), s/veh	2.8	0.1	0.0	0.0	16.0	18.6	6.9	0.0	107.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.0	0.0	8.0	7.4	5.2	0.0	22.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.1	0.0	0.0	42.1	44.8	34.5	0.0	137.2			
LnGrp LOS	B	A	A	A	D	D	C	A	F			
Approach Vol, veh/h		1407			722			677				
Approach Delay, s/veh		12.0			43.4			94.6				
Approach LOS		B			D			F				

Timer - Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		54.4		20.6	29.4	25.0		
Change Period (Y+Rc), s		5.5		4.6	5.5	* 5.5		
Max Green Setting (Gmax), s		48.9		16.0	21.8	* 23		
Max Q Clear Time (g_c+I1), s		2.0		18.0	18.5	17.5		
Green Ext Time (p_c), s		2.3		0.0	1.3	1.6		

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	717	10	1076	992	0	393
Future Volume (veh/h)	717	10	1076	992	0	393
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	781	0	1157	0	0	423
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	920	419	1698		0	1698
Arrive On Green	0.26	0.00	0.48	0.00	0.00	0.48
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	781	0	1157	0	0	423
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	11.5	0.0	13.9	0.0	0.0	3.9
Cycle Q Clear(g_c), s	11.5	0.0	13.9	0.0	0.0	3.9
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	920	419	1698		0	1698
V/C Ratio(X)	0.85	0.00	0.68		0.00	0.25
Avail Cap(c_a), veh/h	983	448	1698		0	1698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	11.0	0.0	0.0	8.4
Incr Delay (d2), s/veh	7.0	0.0	2.2	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.9	0.0	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.3	0.0	13.2	0.0	0.0	8.7
LnGrp LOS	C	A	B		A	A
Approach Vol, veh/h	781		1157	A		423
Approach Delay, s/veh	26.3		13.2			8.7
Approach LOS	C		B			A

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		32.0				32.0	23.0
Change Period (Y+Rc), s		5.5				* 5.5	8.7
Max Green Setting (Gmax), s		25.5				* 26	15.3
Max Q Clear Time (g_c+I1), s		15.9				5.9	13.5
Green Ext Time (p_c), s		6.4				4.4	0.8

Intersection Summary		
HCM 6th Ctrl Delay		16.8
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	260	480	80	80	240	604
Future Volume (vph)	260	480	80	80	240	604
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	289	533	89	89	267	671

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total (vph)	289	533	178	267	671
Volume Left (vph)	289	0	0	267	0
Volume Right (vph)	0	0	89	0	671
Hadj (s)	0.55	0.05	-0.25	0.25	-0.55
Departure Headway (s)	6.2	5.7	5.6	6.2	3.2
Degree Utilization, x	0.50	0.84	0.28	0.46	0.60
Capacity (veh/h)	573	623	611	557	1118
Control Delay (s)	14.0	30.8	10.7	14.5	10.8
Approach Delay (s)	24.9		10.7	11.9	
Approach LOS	C		B	B	

Intersection Summary			
Delay	17.3		
Level of Service	C		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	728	500	464	220	240	30
Future Volume (veh/h)	728	500	464	220	240	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	783	538	499	0	258	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	821	1361	757		359	895
Arrive On Green	0.46	0.73	0.21	0.00	0.10	0.10
Sat Flow, veh/h	1767	1856	3711	0	3428	1572
Grp Volume(v), veh/h	783	538	499	0	258	32
Grp Sat Flow(s),veh/h/ln	1767	1856	1763	0	1714	1572
Q Serve(g_s), s	32.9	8.4	10.0	0.0	5.6	0.7
Cycle Q Clear(g_c), s	32.9	8.4	10.0	0.0	5.6	0.7
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	821	1361	757		359	895
V/C Ratio(X)	0.95	0.40	0.66		0.72	0.04
Avail Cap(c_a), veh/h	935	1816	1394		978	1179
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	3.9	27.7	0.0	33.4	7.3
Incr Delay (d2), s/veh	17.4	0.1	0.4	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	2.2	4.1	0.0	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.3	3.9	28.1	0.0	34.5	7.3
LnGrp LOS	D	A	C		C	A
Approach Vol, veh/h		1321	499	A	290	
Approach Delay, s/veh		23.7	28.1		31.5	
Approach LOS		C	C		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		62.6		14.6	40.0	22.6
Change Period (Y+Rc), s		6.0		6.5	* 4.2	6.0
Max Green Setting (Gmax), s		75.5		22.0	* 41	30.5
Max Q Clear Time (g_c+I1), s		10.4		7.6	34.9	12.0
Green Ext Time (p_c), s		2.5		0.5	0.9	2.1

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	20	392	0	0	10	563	898	0	10	334	80
Future Volume (veh/h)	290	20	392	0	0	10	563	898	0	10	334	80
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	338	0	436				626	998	0	11	371	89
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	3
Cap, veh/h	737	0	988				1480	2181	0	19	535	126
Arrive On Green	0.21	0.00	0.21				0.86	1.00	0.00	0.01	0.19	0.19
Sat Flow, veh/h	3534	0	1480				3428	3618	0	1767	2788	658
Grp Volume(v), veh/h	338	0	436				626	998	0	11	232	228
Grp Sat Flow(s),veh/h/ln	1767	0	1480				1714	1763	0	1767	1763	1684
Q Serve(g_s), s	7.5	0.0	0.0				3.5	0.0	0.0	0.6	11.0	11.4
Cycle Q Clear(g_c), s	7.5	0.0	0.0				3.5	0.0	0.0	0.6	11.0	11.4
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.39
Lane Grp Cap(c), veh/h	737	0	988				1480	2181	0	19	338	323
V/C Ratio(X)	0.46	0.00	0.44				0.42	0.46	0.00	0.58	0.69	0.70
Avail Cap(c_a), veh/h	1178	0	1173				1480	2181	0	100	460	440
HCM Platoon Ratio	1.00	1.00	1.00				2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.69	0.69	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	8.1				3.7	0.0	0.0	44.3	33.8	34.0
Incr Delay (d2), s/veh	0.7	0.0	0.5				0.0	0.5	0.0	10.1	10.8	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	11.0				0.9	0.1	0.0	0.3	5.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	0.0	8.6				3.8	0.5	0.0	54.4	44.7	46.2
LnGrp LOS	C	A	A				A	A	A	D	D	D
Approach Vol, veh/h		774						1624			471	
Approach Delay, s/veh		18.8						1.8			45.6	
Approach LOS		B						A			D	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	5.4	60.6	24.1	43.8	22.2
Change Period (Y+Rc), s	4.4	4.9	5.3	4.9	* 4.9
Max Green Setting (Gmax), s	5.1	40.3	30.0	21.9	* 24
Max Q Clear Time (g_c+I1), s	2.6	2.0	9.5	5.5	13.4
Green Ext Time (p_c), s	0.0	10.1	5.4	1.2	2.5

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	77	10	250	10	1181	95	220	546	10
Future Volume (veh/h)	10	10	10	77	10	250	10	1181	95	220	546	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.95	1.00		0.93	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	10	10	80	10	260	10	1230	99	229	569	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	142	117	125	30	306	17	1436	116	456	1971	35
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.01	0.30	0.30	0.26	0.56	0.56
Sat Flow, veh/h	331	515	423	275	109	1108	1767	4749	382	1767	3542	62
Grp Volume(v), veh/h	30	0	0	350	0	0	10	875	454	229	283	296
Grp Sat Flow(s),veh/h/ln	1269	0	0	1491	0	0	1767	1689	1754	1767	1763	1841
Q Serve(g_s), s	0.0	0.0	0.0	15.3	0.0	0.0	0.5	21.9	22.0	9.9	7.6	7.6
Cycle Q Clear(g_c), s	1.1	0.0	0.0	19.9	0.0	0.0	0.5	21.9	22.0	9.9	7.6	7.6
Prop In Lane	0.33		0.33	0.23		0.74	1.00		0.22	1.00		0.03
Lane Grp Cap(c), veh/h	404	0	0	461	0	0	17	1021	530	456	981	1025
V/C Ratio(X)	0.07	0.00	0.00	0.76	0.00	0.00	0.58	0.86	0.86	0.50	0.29	0.29
Avail Cap(c_a), veh/h	487	0	0	547	0	0	102	1054	547	456	981	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.65	0.65	0.65	0.89	0.89	0.89
Uniform Delay (d), s/veh	24.0	0.0	0.0	30.7	0.0	0.0	44.4	29.5	29.6	28.4	10.5	10.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	4.0	0.0	0.0	7.1	6.2	11.2	0.3	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	7.5	0.0	0.0	0.3	9.5	10.6	4.2	2.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	0.0	34.7	0.0	0.0	51.4	35.8	40.8	28.7	11.2	11.2
LnGrp LOS	C	A	A	C	A	A	D	D	D	C	B	B
Approach Vol, veh/h		30			350			1339			808	
Approach Delay, s/veh		24.0			34.7			37.6			16.2	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	28.1	32.1	29.7	5.3	55.0	29.7
Change Period (Y+Rc), s	4.9	* 4.9	4.9	4.4	4.9	4.9
Max Green Setting (Gmax), s	17.6	* 28	30.1	5.2	40.5	30.1
Max Q Clear Time (g_c+I1), s	11.9	24.0	3.1	2.5	9.6	21.9
Green Ext Time (p_c), s	0.2	3.3	0.1	0.0	5.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1036	130	160	533	0	150	0	250	0	0	0
Future Volume (veh/h)	0	1036	130	160	533	0	150	0	250	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		1.00	0.92		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1461	1461	1856	1461	0	1461	1856	1856	1856	1856	1461
Adj Flow Rate, veh/h	0	1079	135	167	555	0	156	0	260	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	1482	185	181	1679	0	410	0	331	0	400	0
Arrive On Green	0.00	0.42	0.42	0.10	0.60	0.00	0.22	0.00	0.22	0.00	0.00	0.00
Sat Flow, veh/h	0	3648	439	1767	2849	0	1287	0	1534	0	1856	0
Grp Volume(v), veh/h	0	815	399	167	555	0	156	0	260	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1330	1297	1767	1388	0	1287	0	1534	0	1856	0
Q Serve(g_s), s	0.0	14.0	14.0	5.1	5.4	0.0	5.9	0.0	8.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.0	14.0	5.1	5.4	0.0	5.9	0.0	8.7	0.0	0.0	0.0
Prop In Lane	0.00		0.34	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	1120	546	181	1679	0	410	0	331	0	400	0
V/C Ratio(X)	0.00	0.73	0.73	0.92	0.33	0.00	0.38	0.00	0.79	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1224	597	181	1787	0	842	0	847	0	1055	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.2	13.2	24.2	5.3	0.0	19.1	0.0	20.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.0	4.1	43.9	0.0	0.0	0.2	0.0	1.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	4.0	4.2	1.1	0.0	1.6	0.0	3.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.2	17.3	68.2	5.4	0.0	19.3	0.0	21.8	0.0	0.0	0.0
LnGrp LOS	A	B	B	E	A	A	B	A	C	A	A	A
Approach Vol, veh/h		1214			722			416			0	
Approach Delay, s/veh		15.8			19.9			20.9			0.0	
Approach LOS		B			B			C				

Timer - Assigned Phs	1	2	4	6	8
Phs Duration (G+Y+Rc), s	10.0	27.9	16.7	37.9	16.7
Change Period (Y+Rc), s	4.4	4.9	* 4.9	4.9	4.9
Max Green Setting (Gmax), s	5.6	25.1	* 31	35.1	30.1
Max Q Clear Time (g_c+I1), s	7.1	16.0	0.0	7.4	10.7
Green Ext Time (p_c), s	0.0	5.1	0.0	2.6	1.1

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	530	140	353	310	70	210	328	586	150	343	140
Future Volume (veh/h)	118	530	140	353	310	70	210	328	586	150	343	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1461	1856	1461	1461	1461	1856	1856	1461	1461	1856	1856
Adj Flow Rate, veh/h	126	564	149	376	330	74	223	349	623	160	365	149
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	150	771	510	361	477	371	202	1002	491	172	1035	417
Arrive On Green	0.08	0.28	0.28	0.13	0.33	0.33	0.11	0.28	0.28	0.12	0.29	0.29
Sat Flow, veh/h	1767	2776	1188	2699	1461	1137	1767	3526	1144	1391	3526	1421
Grp Volume(v), veh/h	126	564	149	376	330	74	223	349	623	160	365	149
Grp Sat Flow(s),veh/h/ln	1767	1388	1188	1350	1461	1137	1767	1763	1144	1391	1763	1421
Q Serve(g_s), s	9.1	23.8	11.3	17.3	25.4	6.1	14.8	10.2	36.8	14.7	10.6	10.7
Cycle Q Clear(g_c), s	9.1	23.8	11.3	17.3	25.4	6.1	14.8	10.2	36.8	14.7	10.6	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	771	510	361	477	371	202	1002	491	172	1035	417
V/C Ratio(X)	0.84	0.73	0.29	1.04	0.69	0.20	1.10	0.35	1.27	0.93	0.35	0.36
Avail Cap(c_a), veh/h	161	783	515	361	477	371	202	1002	491	172	1035	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	42.4	27.4	56.1	37.9	31.4	57.3	36.8	38.2	56.2	36.0	36.1
Incr Delay (d2), s/veh	27.4	3.6	0.4	58.8	3.8	0.1	93.8	0.2	136.8	48.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.6	3.3	8.8	9.6	1.7	11.9	4.5	33.9	7.3	4.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.7	46.0	27.7	114.9	41.7	31.5	151.2	37.0	175.0	104.3	36.1	36.3
LnGrp LOS	F	D	C	F	D	C	F	D	F	F	D	D
Approach Vol, veh/h		839			780			1195			674	
Approach Delay, s/veh		48.7			76.0			130.2			52.3	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	41.9	20.2	44.7	16.4	48.2	21.4	43.5
Change Period (Y+Rc), s	5.4	5.9	5.4	6.7	5.4	5.9	5.4	6.7
Max Green Setting (Gmax), s	17.3	36.5	14.8	38.0	11.8	42.0	16.0	36.8
Max Q Clear Time (g_c+I1), s	19.3	25.8	16.8	12.7	11.1	27.4	16.7	38.8
Green Ext Time (p_c), s	0.0	3.9	0.0	1.7	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	83.4
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	5.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	40	130	728	460	190
Future Vol, veh/h	80	40	130	728	460	190
Conflicting Peds, #/hr	10	13	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	43	140	783	495	204

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1289	620	709	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	166	485	882	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	137	474	874	-	-	-
Mov Cap-2 Maneuver	137	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	63.8		1.5		0	
HCM LOS	F					

Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		874	-	180	-	-
HCM Lane V/C Ratio		0.16	-	0.717	-	-
HCM Control Delay (s)		9.9	-	63.8	-	-
HCM Lane LOS		A	-	F	-	-
HCM 95th %tile Q(veh)		0.6	-	4.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	90	590	270	260	2068	0	0	2244	320
Future Volume (veh/h)	0	0	0	90	590	270	260	2068	0	0	2244	320
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.95	1.00		1.00	1.00		0.96
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h				108	711	325	313	2492	0	0	2704	386
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %				0	3	0	3	3	3	0	3	3
Cap, veh/h				86	579	283	150	3362	0	0	2792	836
Arrive On Green				0.28	0.28	0.28	0.17	1.00	0.00	0.00	0.55	0.55
Sat Flow, veh/h				312	2106	1029	1767	5233	0	0	5233	1517
Grp Volume(v), veh/h				636	0	508	313	2492	0	0	2704	386
Grp Sat Flow(s),veh/h/ln				1840	0	1607	1767	1689	0	0	1689	1517
Q Serve(g_s), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	82.2	24.5
Cycle Q Clear(g_c), s				44.0	0.0	44.0	13.6	0.0	0.0	0.0	82.2	24.5
Prop In Lane				0.17		0.64	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				506	0	442	150	3362	0	0	2792	836
V/C Ratio(X)				1.26	0.00	1.15	2.08	0.74	0.00	0.00	0.97	0.46
Avail Cap(c_a), veh/h				506	0	442	150	3362	0	0	2792	836
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.47	0.47	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				58.0	0.0	58.0	66.4	0.0	0.0	0.0	34.6	21.6
Incr Delay (d2), s/veh				131.2	0.0	90.3	498.3	0.7	0.0	0.0	11.1	1.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				38.9	0.0	29.0	26.3	0.2	0.0	0.0	35.4	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				189.2	0.0	148.3	564.7	0.7	0.0	0.0	45.6	23.4
LnGrp LOS				F	A	F	F	A	A	A	D	C
Approach Vol, veh/h					1144			2805			3090	
Approach Delay, s/veh					171.1			63.6			42.9	
Approach LOS					F			E			D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.1		48.9	18.0	93.1
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9
Max Green Setting (Gmax), s		106.2		44.0	13.6	88.2
Max Q Clear Time (g_c+I1), s		2.0		46.0	15.6	84.2
Green Ext Time (p_c), s		12.8		0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	72.0
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	460	250	180	0	0	0	0	2088	30	180	2054	0
Future Volume (veh/h)	460	250	180	0	0	0	0	2088	30	180	2054	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	366	409	186				0	2153	31	186	2118	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	457	480	381				0	2815	40	186	4340	0
Arrive On Green	0.26	0.26	0.26				0.00	0.55	0.55	0.21	1.00	0.00
Sat Flow, veh/h	1767	1856	1472				0	5310	74	1767	6643	0
Grp Volume(v), veh/h	366	409	186				0	1413	771	186	2118	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1472				0	1689	1840	1767	1596	0
Q Serve(g_s), s	31.0	33.5	17.2				0.0	52.1	52.3	16.8	0.0	0.0
Cycle Q Clear(g_c), s	31.0	33.5	17.2				0.0	52.1	52.3	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	457	480	381				0	1849	1007	186	4340	0
V/C Ratio(X)	0.80	0.85	0.49				0.00	0.76	0.77	1.00	0.49	0.00
Avail Cap(c_a), veh/h	520	546	433				0	1849	1007	186	4340	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.21	0.21	0.15	0.15	0.00
Uniform Delay (d), s/veh	55.4	56.4	50.3				0.0	28.2	28.2	63.2	0.0	0.0
Incr Delay (d2), s/veh	6.7	10.0	0.4				0.0	0.7	1.2	26.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	17.1	6.4				0.0	20.8	22.9	8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	66.4	50.7				0.0	28.8	29.4	89.4	0.1	0.0
LnGrp LOS	E	E	D				A	C	C	F	A	A
Approach Vol, veh/h		961						2184			2304	
Approach Delay, s/veh		61.7						29.0			7.3	
Approach LOS		E						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.2	92.5		46.3		113.7
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	16.8	81.9		47.1		103.1
Max Q Clear Time (g_c+I1), s	18.8	54.3		35.5		2.0
Green Ext Time (p_c), s	0.0	7.2		1.0		8.9

Intersection Summary	
HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	320	20	307	0	200	0	708	309	80	540	0
Future Volume (veh/h)	130	320	20	307	0	200	0	708	309	80	540	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		1.00	1.00		0.87	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	0	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	137	337	21	323	0	211	0	745	325	84	568	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	372	361	23	0	0	0	0	1533	668	361	2567	0
Arrive On Green	0.21	0.21	0.21	0.00	0.00	0.00	0.00	0.67	0.67	0.03	0.73	0.00
Sat Flow, veh/h	1767	1716	107		0		0	2366	990	1767	3618	0
Grp Volume(v), veh/h	137	0	358		0.0		0	577	493	84	568	0
Grp Sat Flow(s),veh/h/ln	1767	0	1823				0	1763	1501	1767	1763	0
Q Serve(g_s), s	10.6	0.0	30.9				0.0	25.4	25.5	2.3	8.4	0.0
Cycle Q Clear(g_c), s	10.6	0.0	30.9				0.0	25.4	25.5	2.3	8.4	0.0
Prop In Lane	1.00		0.06				0.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	372	0	384				0	1189	1012	361	2567	0
V/C Ratio(X)	0.37	0.00	0.93				0.00	0.49	0.49	0.23	0.22	0.00
Avail Cap(c_a), veh/h	399	0	411				0	1189	1012	393	2567	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38				0.00	0.23	0.23	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.0	0.0	62.0				0.0	12.6	12.6	9.7	7.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	13.5				0.0	0.3	0.4	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	15.8				0.0	10.1	8.6	0.9	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	0.0	75.6				0.0	12.9	13.0	9.8	7.2	0.0
LnGrp LOS	D	A	E				A	B	B	A	A	A
Approach Vol, veh/h		495						1070			652	
Approach Delay, s/veh		69.7						13.0			7.6	
Approach LOS		E						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.6	112.8		38.6		121.4
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9
Max Green Setting (Gmax), s	7.1	65.6		36.1		77.1
Max Q Clear Time (g_c+I1), s	4.3	27.5		32.9		10.4
Green Ext Time (p_c), s	0.0	25.8		0.8		14.5

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	462	215	323	414	20	249	1618	477	0	1574	670
Future Volume (veh/h)	490	462	215	323	414	20	249	1618	477	0	1574	670
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	578	439	234	274	557	22	271	1759	518	0	1711	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	820	430	345	299	600	24	307	1897	538	0	1848	
Arrive On Green	0.23	0.23	0.23	0.06	0.06	0.06	0.18	0.98	0.98	0.00	0.36	0.00
Sat Flow, veh/h	3534	1856	1488	1767	3542	140	3428	3885	1103	0	5233	1572
Grp Volume(v), veh/h	578	439	234	274	291	288	271	1520	757	0	1711	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1488	1767	1856	1826	1714	1689	1611	0	1689	1572
Q Serve(g_s), s	24.0	37.1	22.9	24.7	25.0	25.1	12.3	17.1	29.2	0.0	51.8	0.0
Cycle Q Clear(g_c), s	24.0	37.1	22.9	24.7	25.0	25.1	12.3	17.1	29.2	0.0	51.8	0.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.68	0.00		1.00
Lane Grp Cap(c), veh/h	820	430	345	299	314	309	307	1649	787	0	1848	
V/C Ratio(X)	0.71	1.02	0.68	0.92	0.93	0.93	0.88	0.92	0.96	0.00	0.93	
Avail Cap(c_a), veh/h	820	430	345	299	314	309	315	1649	787	0	1848	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	0.51	0.51	0.51	0.00	0.87	0.00
Uniform Delay (d), s/veh	56.4	61.5	56.0	74.4	74.6	74.6	64.8	1.2	1.3	0.0	48.7	0.0
Incr Delay (d2), s/veh	2.4	48.6	4.4	26.6	28.0	28.8	13.3	5.7	15.5	0.0	8.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	23.3	9.1	14.1	15.1	14.9	5.5	2.0	4.1	0.0	23.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	110.1	60.4	101.0	102.6	103.4	78.1	6.9	16.8	0.0	57.2	0.0
LnGrp LOS	E	F	E	F	F	F	E	A	B	A	E	
Approach Vol, veh/h		1251			853			2548			1711	A
Approach Delay, s/veh		77.1			102.3			17.4			57.2	
Approach LOS		E			F			B			E	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		84.0		43.0	19.7	64.3		33.0
Change Period (Y+Rc), s		5.9		5.9	5.4	5.9		5.9
Max Green Setting (Gmax), s		78.1		37.1	14.7	58.0		27.1
Max Q Clear Time (g_c+I1), s		31.2		39.1	14.3	53.8		27.1
Green Ext Time (p_c), s		9.1		0.0	0.0	2.3		0.0

Intersection Summary		
HCM 6th Ctrl Delay		51.2
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	407	150	145	565	297	210	1597	90	399	1158	135
Future Volume (veh/h)	297	407	150	145	565	297	210	1597	90	399	1158	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	316	433	160	154	601	316	223	1699	96	424	1232	144
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	357	531	226	246	665	280	264	1821	103	724	2334	273
Arrive On Green	0.10	0.15	0.15	0.14	0.19	0.19	0.08	0.37	0.37	0.42	1.00	1.00
Sat Flow, veh/h	3428	3526	1498	1767	3526	1487	3428	4898	276	3428	4586	536
Grp Volume(v), veh/h	316	433	160	154	601	316	223	1171	624	424	907	469
Grp Sat Flow(s),veh/h/ln	1714	1763	1498	1767	1763	1487	1714	1689	1797	1714	1689	1745
Q Serve(g_s), s	14.6	19.0	13.7	13.2	26.7	19.9	10.3	53.3	53.5	15.2	0.0	0.0
Cycle Q Clear(g_c), s	14.6	19.0	13.7	13.2	26.7	19.9	10.3	53.3	53.5	15.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.31
Lane Grp Cap(c), veh/h	357	531	226	246	665	280	264	1256	668	724	1719	888
V/C Ratio(X)	0.89	0.82	0.71	0.63	0.90	1.13	0.84	0.93	0.93	0.59	0.53	0.53
Avail Cap(c_a), veh/h	420	729	310	246	734	309	334	1391	740	724	1719	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.64	0.64	0.64	0.35	0.35	0.35
Uniform Delay (d), s/veh	70.7	65.8	45.7	65.0	63.5	28.1	72.9	48.3	48.4	40.8	0.0	0.0
Incr Delay (d2), s/veh	16.2	3.6	2.1	3.8	13.0	92.2	8.2	9.6	15.9	0.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	8.9	5.3	6.2	13.2	14.4	4.8	23.9	26.7	5.5	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.9	69.4	47.8	68.7	76.5	120.4	81.1	57.9	64.3	41.1	0.4	0.8
LnGrp LOS	F	E	D	E	E	F	F	E	E	D	A	A
Approach Vol, veh/h		909			1071			2018			1800	
Approach Delay, s/veh		71.7			88.3			62.5			10.1	
Approach LOS		E			F			E			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.5	64.4	27.1	29.0	16.7	87.1	21.0	35.1
Change Period (Y+Rc), s	5.7	* 4.9	4.9	* 4.9	4.4	5.7	4.4	4.9
Max Green Setting (Gmax), s	22.6	* 66	19.8	* 33	15.6	72.1	19.6	33.3
Max Q Clear Time (g_c+I1), s	17.2	55.5	15.2	21.0	12.3	2.0	16.6	28.7
Green Ext Time (p_c), s	0.2	4.0	0.0	1.0	0.1	3.8	0.1	1.0

Intersection Summary			
HCM 6th Ctrl Delay			52.4
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	242	287	20	474	365	120	30	1485	652	150	1179	344
Future Volume (veh/h)	242	287	20	474	365	120	30	1485	652	150	1179	344
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	252	299	21	494	380	125	31	1547	679	156	1228	358
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	271	373	26	536	404	330	41	2261	685	199	1695	728
Arrive On Green	0.15	0.22	0.22	0.16	0.22	0.22	0.02	0.45	0.45	0.02	0.16	0.16
Sat Flow, veh/h	1767	1709	120	3428	1856	1517	1767	5066	1536	3428	3526	1513
Grp Volume(v), veh/h	252	0	320	494	380	125	31	1547	679	156	1228	358
Grp Sat Flow(s),veh/h/ln	1767	0	1829	1714	1856	1517	1767	1689	1536	1714	1763	1513
Q Serve(g_s), s	22.5	0.0	26.5	22.7	32.2	9.6	2.8	38.9	70.2	7.3	53.0	19.9
Cycle Q Clear(g_c), s	22.5	0.0	26.5	22.7	32.2	9.6	2.8	38.9	70.2	7.3	53.0	19.9
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	0	399	536	404	330	41	2261	685	199	1695	728
V/C Ratio(X)	0.93	0.00	0.80	0.92	0.94	0.38	0.75	0.68	0.99	0.79	0.72	0.49
Avail Cap(c_a), veh/h	316	0	445	660	477	390	62	2261	685	249	1695	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	66.8	0.0	59.3	66.5	61.6	38.7	77.7	35.3	44.0	77.5	57.2	16.4
Incr Delay (d2), s/veh	28.6	0.0	8.1	11.2	18.2	0.2	9.9	1.7	32.2	7.8	2.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	0.0	13.3	10.8	17.3	3.7	1.4	16.3	32.5	3.5	25.8	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.4	0.0	67.4	77.8	79.7	38.9	87.6	37.0	76.1	85.3	59.4	18.4
LnGrp LOS	F	A	E	E	E	D	F	D	E	F	E	B
Approach Vol, veh/h		572			999			2257			1742	
Approach Delay, s/veh		79.7			73.6			49.5			53.3	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	77.1	29.4	39.8	8.1	82.6	29.5	39.7
Change Period (Y+Rc), s	4.4	* 5.7	4.4	4.9	4.4	5.7	4.9	* 4.9
Max Green Setting (Gmax), s	11.6	* 60	30.8	38.9	5.6	65.3	28.6	* 41
Max Q Clear Time (g_c+I1), s	9.3	72.2	24.7	28.5	4.8	55.0	24.5	34.2
Green Ext Time (p_c), s	0.0	0.0	0.3	0.5	0.0	3.1	0.1	0.6

Intersection Summary		
HCM 6th Ctrl Delay		58.1
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	899	170	400	829	130	400
Future Volume (veh/h)	899	170	400	829	130	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	988	187	440	911	143	440
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	985	186	432	2173	112	345
Arrive On Green	0.34	0.34	0.24	0.62	0.29	0.29
Sat Flow, veh/h	3026	554	1767	3618	386	1188
Grp Volume(v), veh/h	593	582	440	911	584	0
Grp Sat Flow(s),veh/h/ln	1763	1725	1767	1763	1577	0
Q Serve(g_s), s	37.1	37.1	27.0	14.8	32.1	0.0
Cycle Q Clear(g_c), s	37.1	37.1	27.0	14.8	32.1	0.0
Prop In Lane		0.32	1.00		0.24	0.75
Lane Grp Cap(c), veh/h	592	579	432	2173	458	0
V/C Ratio(X)	1.00	1.01	1.02	0.42	1.28	0.00
Avail Cap(c_a), veh/h	592	579	432	2173	458	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	36.7	41.8	11.0	39.2	0.0
Incr Delay (d2), s/veh	37.5	38.7	48.2	0.1	139.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	21.5	17.4	5.5	30.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.2	75.4	90.0	11.1	179.1	0.0
LnGrp LOS	F	F	F	B	F	A
Approach Vol, veh/h	1175			1351	584	
Approach Delay, s/veh	74.8			36.8	179.1	
Approach LOS	E			D	F	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.0	42.5				73.5		37.0
Change Period (Y+Rc), s	4.0	* 5.4				5.4		4.9
Max Green Setting (Gmax), s	27.0	* 37				67.6		32.1
Max Q Clear Time (g_c+I1), s	29.0	39.1				16.8		34.1
Green Ext Time (p_c), s	0.0	0.0				8.2		0.0

Intersection Summary			
HCM 6th Ctrl Delay			77.9
HCM 6th LOS			E

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	245	927	20	0	959
Future Vol, veh/h	0	245	927	20	0	959
Conflicting Peds, #/hr	0	10	0	10	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	253	956	21	0	989

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	509	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	507	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	497	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	497	-
HCM Lane V/C Ratio	-	-	0.508	-
HCM Control Delay (s)	-	-	19.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	2.8	-

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1189	1205	937	865	84
Future Volume (veh/h)	0	1189	1205	937	865	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	1226	1242	966	892	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	3	3	3	3
Cap, veh/h	0	1683	1683	1223	1092	
Arrive On Green	0.00	0.48	0.48	0.48	0.32	0.00
Sat Flow, veh/h	0	3711	3618	1513	3428	1572
Grp Volume(v), veh/h	0	1226	1242	966	892	0
Grp Sat Flow(s),veh/h/ln	0	1763	1763	1513	1714	1572
Q Serve(g_s), s	0.0	14.5	14.8	18.7	12.4	0.0
Cycle Q Clear(g_c), s	0.0	14.5	14.8	18.7	12.4	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1683	1683	1223	1092	
V/C Ratio(X)	0.00	0.73	0.74	0.79	0.82	
Avail Cap(c_a), veh/h	0	1724	1724	1241	1584	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.9	11.0	3.0	16.3	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.7	3.5	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	4.9	12.3	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	12.4	12.6	6.5	18.2	0.0
LnGrp LOS	A	B	B	A	B	
Approach Vol, veh/h		1226	2208		892	A
Approach Delay, s/veh		12.4	9.9		18.2	
Approach LOS		B	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		30.2		21.7		30.2
Change Period (Y+Rc), s		5.4		5.2		5.4
Max Green Setting (Gmax), s		25.4		24.0		25.4
Max Q Clear Time (g_c+I1), s		16.5		14.4		20.7
Green Ext Time (p_c), s		5.3		2.1		4.1

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	80	80	0	60	60	824	30	50	696	50
Future Volume (veh/h)	60	0	80	80	0	60	60	824	30	50	696	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	0	91	91	0	68	68	936	34	57	791	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	224	38	179	494	0	322	94	1879	68	83	1774	127
Arrive On Green	0.21	0.00	0.21	0.21	0.00	0.21	0.05	0.38	0.38	0.05	0.37	0.37
Sat Flow, veh/h	454	177	844	1282	0	1516	1767	5009	182	1767	4808	345
Grp Volume(v), veh/h	159	0	0	91	0	68	68	631	339	57	554	294
Grp Sat Flow(s),veh/h/ln	1475	0	0	1282	0	1516	1767	1689	1813	1767	1689	1775
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	1.5	1.5	5.8	5.8	1.3	5.0	5.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	1.7	0.0	1.5	1.5	5.8	5.8	1.3	5.0	5.0
Prop In Lane	0.43		0.57	1.00		1.00	1.00		0.10	1.00		0.19
Lane Grp Cap(c), veh/h	441	0	0	494	0	322	94	1267	680	83	1246	655
V/C Ratio(X)	0.36	0.00	0.00	0.18	0.00	0.21	0.73	0.50	0.50	0.69	0.44	0.45
Avail Cap(c_a), veh/h	1272	0	0	1245	0	1210	237	1814	974	294	1915	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	0.0	13.2	0.0	13.1	18.8	9.7	9.7	18.9	9.6	9.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.1	4.0	0.4	0.8	3.8	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.6	0.0	0.4	0.6	1.7	1.9	0.5	1.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	0.0	13.2	0.0	13.2	22.7	10.1	10.4	22.6	9.9	10.2
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	A	B
Approach Vol, veh/h		159			159			1038			905	
Approach Delay, s/veh		14.0			13.2			11.0			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	20.5		13.4	6.5	20.2		13.4
Change Period (Y+Rc), s	4.4	* 5.4		4.9	4.4	5.4		4.9
Max Green Setting (Gmax), s	6.7	* 22		32.1	5.4	22.8		32.1
Max Q Clear Time (g_c+I1), s	3.3	7.8		5.6	3.5	7.0		3.7
Green Ext Time (p_c), s	0.0	6.7		0.6	0.0	5.7		0.4

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	59.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	589	357	684	856	20
Future Vol, veh/h	0	589	357	684	856	20
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	160	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	620	376	720	901	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	481	932	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	5.36	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	3.13	-	-	-
Pot Cap-1 Maneuver	0	~ 452	419	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 443	415	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	217.9	19.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	415	-	443	-	-
HCM Lane V/C Ratio	0.906	-	1.4	-	-
HCM Control Delay (s)	55.6	-	217.9	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	9.7	-	29.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	23.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	414	0	1226	1296	152
Future Vol, veh/h	0	414	0	1226	1296	152
Conflicting Peds, #/hr	0	10	0	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	427	0	1264	1336	157

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	768	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	-	-	-	-
Pot Cap-1 Maneuver	0	~ 342	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 335	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	177.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	335	-	-
HCM Lane V/C Ratio	-	1.274	-	-
HCM Control Delay (s)	-	177.2	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	19.6	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	20	100	150	60	110	210	965	20	25	1587	99
Future Volume (veh/h)	147	20	100	150	60	110	210	965	20	25	1587	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.81	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	163	22	111	167	67	122	233	1072	22	28	1763	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	457	387	191	517	354	205	1617	693	35	1244	77
Arrive On Green	0.08	0.25	0.25	0.11	0.28	0.28	0.12	0.46	0.46	0.02	0.37	0.37
Sat Flow, veh/h	1767	1856	1572	1767	1856	1271	1767	3526	1512	1767	3363	207
Grp Volume(v), veh/h	163	22	111	167	67	122	233	1072	22	28	914	959
Grp Sat Flow(s),veh/h/ln	1767	1856	1572	1767	1856	1271	1767	1763	1512	1767	1763	1807
Q Serve(g_s), s	10.6	1.3	8.0	13.0	3.8	10.7	16.2	33.1	1.1	2.2	51.8	51.8
Cycle Q Clear(g_c), s	10.6	1.3	8.0	13.0	3.8	10.7	16.2	33.1	1.1	2.2	51.8	51.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	134	457	387	191	517	354	205	1617	693	35	652	669
V/C Ratio(X)	1.22	0.05	0.29	0.87	0.13	0.34	1.14	0.66	0.03	0.79	1.40	1.43
Avail Cap(c_a), veh/h	134	457	387	276	530	363	205	1617	693	72	652	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	40.3	42.8	61.5	37.8	40.3	61.9	29.5	20.8	68.3	44.1	44.1
Incr Delay (d2), s/veh	148.0	0.0	0.1	14.2	0.0	0.2	105.5	1.1	0.0	13.8	189.9	203.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.6	3.2	6.6	1.8	3.4	13.3	14.2	0.4	1.1	56.8	60.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	212.7	40.3	42.9	75.7	37.8	40.5	167.4	30.6	20.8	82.1	234.0	247.7
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	F	F
Approach Vol, veh/h		296			356			1327			1901	
Approach Delay, s/veh		136.2			56.5			54.4			238.7	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	72.9	19.5	39.4	20.6	60.5	15.0	43.9
Change Period (Y+Rc), s	5.4	8.7	4.4	4.9	4.4	* 8.7	4.4	4.9
Max Green Setting (Gmax), s	5.7	60.3	21.9	28.7	16.2	* 52	10.6	40.0
Max Q Clear Time (g_c+I1), s	4.2	35.1	15.0	10.0	18.2	53.8	12.6	12.7
Green Ext Time (p_c), s	0.0	10.7	0.1	0.2	0.0	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	151.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1944.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2095	1845	1195	1687	150
Future Vol, veh/h	0	2095	1845	1195	1687	150
Conflicting Peds, #/hr	0	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	600	-	-	400
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	2328	2050	1328	1874	167

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	957	2051	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.96	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	0	~ 256	~ 267	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 251	~ 264	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 3758.7	$ 1868.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 264	-	251	-	-
HCM Lane V/C Ratio	7.765	-	9.274	-	-
HCM Control Delay (s)	$ 3078.5	-	$ 3758.7	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	226.6	-	262.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	100	227	160	230	10	355	40	180	10	90	30
Future Volume (veh/h)	10	100	227	160	230	10	355	40	180	10	90	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.93	0.98		0.95	0.98		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	105	239	168	242	11	374	42	189	11	95	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	417	175	397	313	642	29	499	45	201	95	601	190
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	1105	478	1087	1011	1757	80	856	96	433	59	1292	408
Grp Volume(v), veh/h	11	0	344	168	0	253	605	0	0	138	0	0
Grp Sat Flow(s),veh/h/ln	1105	0	1565	1011	0	1836	1385	0	0	1760	0	0
Q Serve(g_s), s	0.4	0.0	10.3	9.4	0.0	5.9	21.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	10.3	19.7	0.0	5.9	23.8	0.0	0.0	2.6	0.0	0.0
Prop In Lane	1.00		0.69	1.00		0.04	0.62		0.31	0.08		0.23
Lane Grp Cap(c), veh/h	417	0	572	313	0	671	745	0	0	885	0	0
V/C Ratio(X)	0.03	0.00	0.60	0.54	0.00	0.38	0.81	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	417	0	572	313	0	671	798	0	0	951	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.8	0.0	14.9	22.9	0.0	13.5	14.3	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.3	1.9	0.0	0.4	5.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.6	2.2	0.0	2.2	7.2	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	17.2	24.8	0.0	13.9	19.7	0.0	0.0	9.0	0.0	0.0
LnGrp LOS	B	A	B	C	A	B	B	A	A	A	A	A
Approach Vol, veh/h		355			421			605			138	
Approach Delay, s/veh		17.1			18.2			19.7			9.0	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	26.0	31.7	26.0	31.7
Change Period (Y+Rc), s	4.9	4.9	4.9	4.9
Max Green Setting (Gmax), s	21.1	29.1	21.1	29.1
Max Q Clear Time (g_c+I1), s	12.3	4.6	21.7	25.8
Green Ext Time (p_c), s	2.2	0.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	10	20	60	130	220	517	395	40	0	387	190
Future Volume (veh/h)	0	10	20	60	130	220	517	395	40	0	387	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	11	22	65	141	239	562	429	43	0	421	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	0	131	262	94	134	205	459	1052	105	0	374	184
Arrive On Green	0.00	0.24	0.24	0.24	0.24	0.24	0.26	0.64	0.64	0.00	0.32	0.32
Sat Flow, veh/h	0	543	1086	175	557	849	1767	1653	166	0	1164	572
Grp Volume(v), veh/h	0	0	33	445	0	0	562	0	472	0	0	628
Grp Sat Flow(s),veh/h/ln	0	0	1630	1581	0	0	1767	0	1819	0	0	1736
Q Serve(g_s), s	0.0	0.0	1.3	14.8	0.0	0.0	20.8	0.0	10.2	0.0	0.0	25.7
Cycle Q Clear(g_c), s	0.0	0.0	1.3	19.3	0.0	0.0	20.8	0.0	10.2	0.0	0.0	25.7
Prop In Lane	0.00		0.67	0.15		0.54	1.00		0.09	0.00		0.33
Lane Grp Cap(c), veh/h	0	0	393	433	0	0	459	0	1157	0	0	558
V/C Ratio(X)	0.00	0.00	0.08	1.03	0.00	0.00	1.22	0.00	0.41	0.00	0.00	1.13
Avail Cap(c_a), veh/h	0	0	393	433	0	0	459	0	1157	0	0	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	23.5	31.4	0.0	0.0	29.6	0.0	7.1	0.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	50.5	0.0	0.0	118.6	0.0	0.1	0.0	0.0	77.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	14.4	0.0	0.0	23.5	0.0	3.3	0.0	0.0	22.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	23.5	81.9	0.0	0.0	148.2	0.0	7.2	0.0	0.0	104.9
LnGrp LOS	A	A	C	F	A	A	F	A	A	A	A	F
Approach Vol, veh/h		33			445			1034			628	
Approach Delay, s/veh		23.5			81.9			83.9			104.9	
Approach LOS		C			F			F			F	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2	25.2	30.6		24.2				
Change Period (Y+Rc), s		4.9		4.9	4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.9		19.3	20.8	25.7		19.3				
Max Q Clear Time (g_c+I1), s		12.2		3.3	22.8	27.7		21.3				
Green Ext Time (p_c), s		2.1		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			88.7									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	49.4
Intersection LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	410	434	0	521	177	0
Future Vol, veh/h	410	434	0	521	177	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	456	482	0	579	197	0
Number of Lanes	1	1	0	1	1	0

Approach	EB			NB	SB
Opposing Approach				SB	NB
Opposing Lanes	0			1	1
Conflicting Approach Left	SB			EB	
Conflicting Lanes Left	1			2	0
Conflicting Approach Right	NB				EB
Conflicting Lanes Right	1			0	2
HCM Control Delay	44.9			68.4	14.6
HCM LOS	E			F	B

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	521	410	434	177
LT Vol	0	410	0	0
Through Vol	521	0	0	177
RT Vol	0	0	434	0
Lane Flow Rate	579	456	482	197
Geometry Grp	2	7	7	2
Degree of Util (X)	1.021	0.949	0.84	0.384
Departure Headway (Hd)	6.347	7.496	6.27	7.194
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	483	579	503
Service Time	4.376	5.252	4.026	5.194
HCM Lane V/C Ratio	1.01	0.944	0.832	0.392
HCM Control Delay	68.4	56.7	33.7	14.6
HCM Lane LOS	F	F	D	B
HCM 95th-tile Q	15.5	11.6	8.9	1.8

Intersection	
Intersection Delay, s/veh	69.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	270	405	47	80	20	512	0	165	10	0	0
Future Vol, veh/h	10	270	405	47	80	20	512	0	165	10	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	284	426	49	84	21	539	0	174	11	0	0
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	22.3	13.9	129.7	11.4
HCM LOS	C	B	F	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	76%	4%	0%	32%	100%
Vol Thru, %	0%	96%	0%	54%	0%
Vol Right, %	24%	0%	100%	14%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	677	280	405	147	10
LT Vol	512	10	0	47	10
Through Vol	0	270	0	80	0
RT Vol	165	0	405	20	0
Lane Flow Rate	713	295	426	155	11
Geometry Grp	2	7	7	5	2
Degree of Util (X)	1.207	0.556	0.719	0.298	0.023
Departure Headway (Hd)	6.095	7.408	6.671	7.675	8.21
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	599	489	546	472	439
Service Time	4.097	5.108	4.371	5.675	6.21
HCM Lane V/C Ratio	1.19	0.603	0.78	0.328	0.025
HCM Control Delay	129.7	19	24.6	13.9	11.4
HCM Lane LOS	F	C	C	B	B
HCM 95th-tile Q	25.7	3.3	5.9	1.2	0.1

Intersection	
Intersection Delay, s/veh	108.3
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	50	150	617	120	332
Future Vol, veh/h	60	50	150	617	120	332
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	61	183	752	146	405
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.8	173.2	21.8
HCM LOS	B	F	C

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	20%	100%	0%	0%
Vol Thru, %	80%	0%	0%	27%
Vol Right, %	0%	0%	100%	73%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	767	60	50	452
LT Vol	150	60	0	0
Through Vol	617	0	0	120
RT Vol	0	0	50	332
Lane Flow Rate	935	73	61	551
Geometry Grp	2	7	7	2
Degree of Util (X)	1.325	0.158	0.111	0.743
Departure Headway (Hd)	5.099	8.454	7.215	5.247
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	711	427	500	695
Service Time	3.184	6.154	4.915	3.247
HCM Lane V/C Ratio	1.315	0.171	0.122	0.793
HCM Control Delay	173.2	12.7	10.8	21.8
HCM Lane LOS	F	B	B	C
HCM 95th-tile Q	37.4	0.6	0.4	6.7

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	14	407	0	360	180	40	130	0
Future Vol, veh/h	0	0	0	10	14	407	0	360	180	40	130	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	12	17	485	0	429	214	48	155	0
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	0	25.1	22.1	13.5
HCM LOS	-	D	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	2%	24%
Vol Thru, %	100%	0%	100%	3%	76%
Vol Right, %	0%	100%	0%	94%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	180	0	431	170
LT Vol	0	0	0	10	40
Through Vol	360	0	0	14	130
RT Vol	0	180	0	407	0
Lane Flow Rate	429	214	0	513	202
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.766	0.341	0	0.778	0.369
Departure Headway (Hd)	6.435	5.722	7.409	5.462	6.556
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	561	626	0	657	546
Service Time	4.203	3.489	5.409	3.526	4.636
HCM Lane V/C Ratio	0.765	0.342	0	0.781	0.37
HCM Control Delay	27.4	11.5	10.4	25.1	13.5
HCM Lane LOS	D	B	N	D	B
HCM 95th-tile Q	6.9	1.5	0	7.4	1.7

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	180	100	0	0	0	100	80	160	240	90	47
Future Vol, veh/h	115	180	100	0	0	0	100	80	160	240	90	47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	126	198	110	0	0	0	110	88	176	264	99	52
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	23.6	17.7	21.9
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	29%	29%	64%
Vol Thru, %	24%	46%	24%
Vol Right, %	47%	25%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	340	395	377
LT Vol	100	115	240
Through Vol	80	180	90
RT Vol	160	100	47
Lane Flow Rate	374	434	414
Geometry Grp	1	1	1
Degree of Util (X)	0.607	0.726	0.695
Departure Headway (Hd)	5.852	6.024	6.038
Convergence, Y/N	Yes	Yes	Yes
Cap	609	595	592
Service Time	3.949	4.111	4.131
HCM Lane V/C Ratio	0.614	0.729	0.699
HCM Control Delay	17.7	23.6	21.9
HCM Lane LOS	C	C	C
HCM 95th-tile Q	4.1	6.1	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	160	220	40	380	1623	0	0	537	580
Future Volume (veh/h)	0	0	0	160	220	40	380	1623	0	0	537	580
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1856	1900	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				168	232	42	400	1708	0	0	565	611
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				300	491	87	467	2526	0	0	1866	811
Arrive On Green				0.17	0.17	0.17	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1767	2897	514	3428	3618	0	0	3618	1532
Grp Volume(v), veh/h				168	133	141	400	1708	0	0	565	611
Grp Sat Flow(s),veh/h/ln				1767	1689	1723	1714	1763	0	0	1763	1532
Q Serve(g_s), s				7.5	6.1	6.4	9.5	0.0	0.0	0.0	7.7	26.9
Cycle Q Clear(g_c), s				7.5	6.1	6.4	9.5	0.0	0.0	0.0	7.7	26.9
Prop In Lane				1.00		0.30	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				300	286	292	467	2526	0	0	1866	811
V/C Ratio(X)				0.56	0.47	0.48	0.86	0.68	0.00	0.00	0.30	0.75
Avail Cap(c_a), veh/h				536	512	523	502	2526	0	0	1866	811
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.23	0.23	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.8	32.2	32.3	30.5	0.0	0.0	0.0	11.3	15.9
Incr Delay (d2), s/veh				0.6	0.4	0.5	3.4	0.3	0.0	0.0	0.4	6.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	2.5	2.6	3.5	0.1	0.0	0.0	2.9	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.4	32.6	32.8	33.9	0.3	0.0	0.0	11.8	22.3
LnGrp LOS				C	C	C	C	A	A	A	B	C
Approach Vol, veh/h					442			2108			1176	
Approach Delay, s/veh					33.0			6.7			17.2	
Approach LOS					C			A			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		66.5			16.1	50.4		19.5				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		50.1			12.6	33.1		26.1				
Max Q Clear Time (g_c+I1), s		2.0			11.5	28.9		9.5				
Green Ext Time (p_c), s		26.5			0.2	2.4		1.6				

Intersection Summary			
HCM 6th Ctrl Delay			13.1
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1080	360	200	0	0	0	0	923	150	260	437	0
Future Volume (veh/h)	1080	360	200	0	0	0	0	923	150	260	437	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1485				0	1485	1485	1856	1485	0
Adj Flow Rate, veh/h	1113	371	206				0	952	155	268	451	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1241	652	415				0	1084	464	341	1510	0
Arrive On Green	0.35	0.35	0.35				0.00	0.38	0.38	0.10	0.53	0.00
Sat Flow, veh/h	3534	1856	1183				0	2897	1208	3428	2897	0
Grp Volume(v), veh/h	1113	371	206				0	952	155	268	451	0
Grp Sat Flow(s),veh/h/ln	1767	1856	1183				0	1411	1208	1714	1411	0
Q Serve(g_s), s	25.6	13.9	11.8				0.0	27.0	7.8	6.6	7.6	0.0
Cycle Q Clear(g_c), s	25.6	13.9	11.8				0.0	27.0	7.8	6.6	7.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1241	652	415				0	1084	464	341	1510	0
V/C Ratio(X)	0.90	0.57	0.50				0.00	0.88	0.33	0.79	0.30	0.00
Avail Cap(c_a), veh/h	1360	714	455				0	1084	464	343	1510	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.76	0.76	0.96	0.96	0.00
Uniform Delay (d), s/veh	26.4	22.6	21.9				0.0	24.6	18.7	37.8	11.1	0.0
Incr Delay (d2), s/veh	7.3	0.4	0.3				0.0	7.9	1.5	10.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	5.9	3.2				0.0	9.7	2.3	3.2	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	23.1	22.3				0.0	32.5	20.2	47.9	11.6	0.0
LnGrp LOS	C	C	C				A	C	C	D	B	A
Approach Vol, veh/h		1690						1107			719	
Approach Delay, s/veh		30.0						30.8			25.1	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	13.0	37.9		35.1		50.9						
Change Period (Y+Rc), s	4.4	4.9		4.9		4.9						
Max Green Setting (Gmax), s	8.6	30.1		33.1		43.1						
Max Q Clear Time (g_c+I1), s	8.6	29.0		27.6		9.6						
Green Ext Time (p_c), s	0.0	0.8		2.5		3.7						

Intersection Summary			
HCM 6th Ctrl Delay			29.2
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

31: Washington St & Pacific Hwy (N)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	0	100	60	50	130	150	863	0	0	490	147
Future Volume (veh/h)	80	0	100	60	50	130	150	863	0	0	490	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.94	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1856	1856	1856	1856	1485	1856	1485	0	0	1485	1485
Adj Flow Rate, veh/h	84	0	105	63	53	137	158	908	0	0	516	155
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	48	0	61	322	339	269	199	1425	0	0	895	383
Arrive On Green	0.07	0.00	0.07	0.18	0.18	0.18	0.11	0.50	0.00	0.00	0.32	0.32
Sat Flow, veh/h	728	0	910	1767	1856	1474	1767	2897	0	0	2897	1206
Grp Volume(v), veh/h	189	0	0	63	53	137	158	908	0	0	516	155
Grp Sat Flow(s),veh/h/ln	1639	0	0	1767	1856	1474	1767	1411	0	0	1411	1206
Q Serve(g_s), s	4.0	0.0	0.0	1.8	1.4	5.0	5.2	14.1	0.0	0.0	9.2	6.1
Cycle Q Clear(g_c), s	4.0	0.0	0.0	1.8	1.4	5.0	5.2	14.1	0.0	0.0	9.2	6.1
Prop In Lane	0.44		0.56	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	109	0	0	322	339	269	199	1425	0	0	895	383
V/C Ratio(X)	1.73	0.00	0.00	0.20	0.16	0.51	0.79	0.64	0.00	0.00	0.58	0.41
Avail Cap(c_a), veh/h	109	0	0	764	802	637	250	2141	0	0	1512	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	0.0	20.8	20.7	22.2	26.0	10.9	0.0	0.0	17.1	16.1
Incr Delay (d2), s/veh	365.4	0.0	0.0	0.1	0.1	0.6	13.8	0.2	0.0	0.0	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	0.0	0.0	0.7	0.6	1.7	2.8	3.6	0.0	0.0	2.8	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	393.5	0.0	0.0	20.9	20.8	22.7	39.8	11.0	0.0	0.0	17.9	16.9
LnGrp LOS	F	A	A	C	C	C	D	B	A	A	B	B
Approach Vol, veh/h		189			253			1066			671	
Approach Delay, s/veh		393.5			21.9			15.3			17.6	
Approach LOS		F			C			B			B	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		34.8		8.0	11.3	23.5		17.4
Change Period (Y+Rc), s		* 4.4		4.0	4.5	4.4		6.4
Max Green Setting (Gmax), s		* 46		4.0	8.5	32.2		26.0
Max Q Clear Time (g_c+I1), s		16.1		6.0	7.2	11.2		7.0
Green Ext Time (p_c), s		4.8		0.0	0.1	4.8		0.8

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

32: Washington St & Pacific Hwy (S)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	633	100	80	0	0	0	0	380	60	220	140	0
Future Volume (veh/h)	633	100	80	0	0	0	0	380	60	220	140	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856				1856	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	733	0	83				0	396	62	229	146	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3				3	3	3	3	3	0
Cap, veh/h	1042	0	769				0	615	95	280	536	0
Arrive On Green	0.29	0.00	0.29				0.00	0.20	0.20	0.16	0.16	0.00
Sat Flow, veh/h	3534	0	1526				0	3119	469	1767	3544	0
Grp Volume(v), veh/h	733	0	83				0	229	229	229	146	0
Grp Sat Flow(s),veh/h/ln	1767	0	1526				0	1763	1732	1767	1689	0
Q Serve(g_s), s	7.8	0.0	1.2				0.0	5.0	5.1	5.3	1.6	0.0
Cycle Q Clear(g_c), s	7.8	0.0	1.2				0.0	5.0	5.1	5.3	1.6	0.0
Prop In Lane	1.00		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	1042	0	769				0	358	352	280	536	0
V/C Ratio(X)	0.70	0.00	0.11				0.00	0.64	0.65	0.82	0.27	0.00
Avail Cap(c_a), veh/h	2495	0	1397				0	585	574	280	536	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	5.6				0.0	15.4	15.4	17.2	15.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0				0.0	0.7	0.8	17.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.5				0.0	1.8	1.8	3.2	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	5.7				0.0	16.1	16.2	34.3	15.9	0.0
LnGrp LOS	B	A	A				A	B	B	C	B	A
Approach Vol, veh/h		816						458			375	
Approach Delay, s/veh		12.8						16.2			27.1	
Approach LOS		B						B			C	

Timer - Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				12.6		18.6		11.0
Change Period (Y+Rc), s				4.0		6.2		4.3
Max Green Setting (Gmax), s				14.0		29.8		6.7
Max Q Clear Time (g_c+I1), s				7.1		9.8		7.3
Green Ext Time (p_c), s				1.1		1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	200	110	390	290	77	180	409	60	175	888	50
Future Volume (veh/h)	60	200	110	390	290	77	180	409	60	175	888	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1537	1856	1537	1537	1537	1856	1856	1537	1537	1856	1856
Adj Flow Rate, veh/h	61	204	112	398	296	79	184	417	61	179	906	51
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	78	280	275	345	434	116	134	993	141	206	1415	79
Arrive On Green	0.04	0.18	0.18	0.24	0.37	0.37	0.08	0.22	0.22	0.14	0.29	0.29
Sat Flow, veh/h	1767	1537	1510	1464	1161	310	1767	4443	631	1464	4898	275
Grp Volume(v), veh/h	61	204	112	398	0	375	184	314	164	179	624	333
Grp Sat Flow(s),veh/h/ln	1767	1537	1510	1464	0	1471	1767	1689	1696	1464	1689	1796
Q Serve(g_s), s	3.0	10.9	5.7	20.6	0.0	18.7	6.6	7.0	7.3	10.5	14.1	14.1
Cycle Q Clear(g_c), s	3.0	10.9	5.7	20.6	0.0	18.7	6.6	7.0	7.3	10.5	14.1	14.1
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.37	1.00		0.15
Lane Grp Cap(c), veh/h	78	280	275	345	0	550	134	755	379	206	975	519
V/C Ratio(X)	0.78	0.73	0.41	1.15	0.00	0.68	1.38	0.42	0.43	0.87	0.64	0.64
Avail Cap(c_a), veh/h	127	563	553	345	0	780	134	982	493	218	1229	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	33.7	31.5	33.4	0.0	23.0	40.4	29.0	29.2	36.7	27.1	27.1
Incr Delay (d2), s/veh	6.2	1.4	0.4	96.7	0.0	1.5	210.0	0.7	1.5	26.6	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.1	2.1	16.4	0.0	6.4	10.6	2.8	3.1	5.2	5.7	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	35.0	31.9	130.1	0.0	24.5	250.3	29.7	30.6	63.3	28.4	29.6
LnGrp LOS	D	D	C	F	A	C	F	C	C	E	C	C
Approach Vol, veh/h		377			773			662			1136	
Approach Delay, s/veh		36.1			78.9			91.3			34.2	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	24.8	25.0	20.8	11.0	30.5	8.3	37.6
Change Period (Y+Rc), s	4.4	5.3	4.4	4.9	4.4	5.3	4.4	4.9
Max Green Setting (Gmax), s	13.0	25.4	20.6	32.0	6.6	31.8	6.3	46.3
Max Q Clear Time (g_c+I1), s	12.5	9.3	22.6	12.9	8.6	16.1	5.0	20.7
Green Ext Time (p_c), s	0.0	4.4	0.0	0.9	0.0	8.5	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	59.0
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	1270	110	100	700	110	110	395	140	190	849	619
Future Volume (veh/h)	365	1270	110	100	700	110	110	395	140	190	849	619
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	420	1460	126	115	805	126	126	454	161	218	976	711
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	437	1335	114	148	760	119	148	842	285	242	1420	816
Arrive On Green	0.25	0.41	0.41	0.08	0.25	0.25	0.08	0.23	0.23	0.14	0.28	0.28
Sat Flow, veh/h	1767	3278	281	1767	3038	476	1767	3702	1253	1767	5066	1525
Grp Volume(v), veh/h	420	780	806	115	467	464	126	412	203	218	976	711
Grp Sat Flow(s),veh/h/ln	1767	1763	1797	1767	1763	1751	1767	1689	1577	1767	1689	1525
Q Serve(g_s), s	32.9	57.0	57.0	8.9	35.0	35.0	9.8	15.0	16.0	17.0	24.0	39.2
Cycle Q Clear(g_c), s	32.9	57.0	57.0	8.9	35.0	35.0	9.8	15.0	16.0	17.0	24.0	39.2
Prop In Lane	1.00		0.16	1.00		0.27	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	437	718	731	148	441	438	148	768	359	242	1420	816
V/C Ratio(X)	0.96	1.09	1.10	0.78	1.06	1.06	0.85	0.54	0.57	0.90	0.69	0.87
Avail Cap(c_a), veh/h	437	718	731	159	441	438	155	768	359	323	1420	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	41.5	41.5	62.9	52.5	52.5	63.2	47.6	48.0	59.5	44.9	29.2
Incr Delay (d2), s/veh	33.2	59.8	64.5	17.8	59.6	59.8	30.6	2.7	6.3	19.0	2.7	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	36.3	38.0	4.8	22.7	22.6	5.7	6.7	6.9	8.9	10.5	23.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.3	101.3	106.0	80.7	112.1	112.3	93.9	50.3	54.3	78.5	47.7	41.5
LnGrp LOS	F	F	F	F	F	F	F	D	D	E	D	D
Approach Vol, veh/h		2006			1046			741			1905	
Approach Delay, s/veh		99.8			108.7			58.8			48.9	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	37.1	17.0	62.3	16.2	44.5	39.0	40.3
Change Period (Y+Rc), s	4.4	* 5.3	5.3	* 5.3	4.4	5.3	4.4	5.3
Max Green Setting (Gmax), s	25.6	* 26	12.6	* 57	12.3	38.7	34.6	35.0
Max Q Clear Time (g_c+I1), s	19.0	18.0	10.9	59.0	11.8	41.2	34.9	37.0
Green Ext Time (p_c), s	0.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1437	2350	1600	167	95	110
Future Volume (veh/h)	1437	2350	1600	167	95	110
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1545	2527	1720	0	102	118
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1188	4152	2210		164	146
Arrive On Green	0.35	0.82	0.44	0.00	0.09	0.09
Sat Flow, veh/h	3428	5233	5233	1572	1767	1572
Grp Volume(v), veh/h	1545	2527	1720	0	102	118
Grp Sat Flow(s),veh/h/ln	1714	1689	1689	1572	1767	1572
Q Serve(g_s), s	41.6	21.5	34.8	0.0	6.7	8.8
Cycle Q Clear(g_c), s	41.6	21.5	34.8	0.0	6.7	8.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1188	4152	2210		164	146
V/C Ratio(X)	1.30	0.61	0.78		0.62	0.81
Avail Cap(c_a), veh/h	1188	4152	2210		442	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	3.9	28.9	0.0	52.4	53.4
Incr Delay (d2), s/veh	141.3	0.7	2.8	0.0	1.4	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	40.5	5.5	14.4	0.0	3.0	7.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	180.5	4.6	31.6	0.0	53.8	57.4
LnGrp LOS	F	A	C		D	E
Approach Vol, veh/h		4072	1720	A	220	
Approach Delay, s/veh		71.3	31.6		55.7	
Approach LOS		E	C		E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.7		16.3	46.0	57.7
Change Period (Y+Rc), s		5.3		5.2	4.4	* 5.3
Max Green Setting (Gmax), s		79.5		30.0	41.6	* 34
Max Q Clear Time (g_c+I1), s		23.5		10.8	43.6	36.8
Green Ext Time (p_c), s		54.9		0.3	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			59.4			
HCM 6th LOS			E			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	167	260	228	85	213	190	1160	189	207	1210	210
Future Volume (veh/h)	180	167	260	228	85	213	190	1160	189	207	1210	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	188	174	271	238	89	222	198	1208	197	216	1260	219
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	249	381	309	184	439	359	256	1139	185	244	1552	796
Arrive On Green	0.07	0.21	0.21	0.10	0.24	0.24	0.07	0.38	0.38	0.14	0.44	0.44
Sat Flow, veh/h	3428	1856	1504	1767	1856	1515	3428	3024	490	1767	3526	1549
Grp Volume(v), veh/h	188	174	271	238	89	222	198	701	704	216	1260	219
Grp Sat Flow(s),veh/h/ln	1714	1856	1504	1767	1856	1515	1714	1763	1751	1767	1763	1549
Q Serve(g_s), s	6.0	9.2	19.5	11.6	4.3	14.6	6.3	42.0	42.0	13.4	34.7	8.9
Cycle Q Clear(g_c), s	6.0	9.2	19.5	11.6	4.3	14.6	6.3	42.0	42.0	13.4	34.7	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	249	381	309	184	439	359	256	664	660	244	1552	796
V/C Ratio(X)	0.76	0.46	0.88	1.29	0.20	0.62	0.77	1.06	1.07	0.89	0.81	0.28
Avail Cap(c_a), veh/h	351	516	418	184	513	419	277	664	660	257	1559	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	38.8	42.9	49.9	34.1	38.0	50.6	34.7	34.7	47.2	27.2	15.4
Incr Delay (d2), s/veh	3.2	0.9	14.8	166.6	0.1	1.1	10.3	50.4	54.4	26.6	3.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.3	8.2	13.5	1.9	5.3	3.0	26.3	26.9	7.5	14.5	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	39.7	57.7	216.5	34.2	39.1	61.0	85.2	89.1	73.8	30.8	15.7
LnGrp LOS	D	D	E	F	C	D	E	F	F	E	C	B
Approach Vol, veh/h		633			549			1603			1695	
Approach Delay, s/veh		51.6			115.2			83.9			34.3	
Approach LOS		D			F			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	47.3	16.0	28.4	12.7	54.4	12.5	31.9				
Change Period (Y+Rc), s	4.4	5.3	4.4	* 5.5	4.4	* 5.3	4.4	5.5				
Max Green Setting (Gmax), s	16.2	42.0	11.6	* 31	9.0	* 49	11.4	30.8				
Max Q Clear Time (g_c+I1), s	15.4	44.0	13.6	21.5	8.3	36.7	8.0	16.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	9.2	0.1	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			64.4									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

37: I-5 SB On Ramp/I-5 SB Off Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱	↰↰	↑↑					↰		↱
Traffic Volume (veh/h)	0	1113	240	230	527	0	0	0	0	160	0	1029
Future Volume (veh/h)	0	1113	240	230	527	0	0	0	0	160	0	1029
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0				1856	0	1856
Adj Flow Rate, veh/h	0	1172	253	242	555	0				168	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0				3	0	3
Cap, veh/h	0	1359	606	1221	2790	0				199	0	
Arrive On Green	0.00	0.39	0.39	0.71	1.00	0.00				0.11	0.00	0.00
Sat Flow, veh/h	0	3618	1572	3428	3618	0				1767	0	1572
Grp Volume(v), veh/h	0	1172	253	242	555	0				168	0	0
Grp Sat Flow(s),veh/h/ln	0	1763	1572	1714	1763	0				1767	0	1572
Q Serve(g_s), s	0.0	30.6	11.8	2.4	0.0	0.0				9.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	30.6	11.8	2.4	0.0	0.0				9.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1359	606	1221	2790	0				199	0	
V/C Ratio(X)	0.00	0.86	0.42	0.20	0.20	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	1833	818	1221	2790	0				361	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.28	0.28	0.74	0.74	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	28.3	22.5	9.6	0.0	0.0				43.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.2	0.6	0.1	0.1	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.5	4.2	0.8	0.0	0.0				4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.5	23.1	9.7	0.1	0.0				47.2	0.0	0.0
LnGrp LOS	A	C	C	A	A	A				D	A	
Approach Vol, veh/h		1425			797						168	A
Approach Delay, s/veh		29.2			3.0						47.2	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.6	43.5		15.9		84.1
Change Period (Y+Rc), s	5.0	* 5		4.6		5.0
Max Green Setting (Gmax), s	13.8	* 52		20.4		70.0
Max Q Clear Time (g_c+I1), s	14.4	32.6		11.3		2.0
Green Ext Time (p_c), s	0.5	5.9		0.0		2.6

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

38: I-5 NB Off Ramp/I-5 NB On Ramp & SeaWorld Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	↑↑			↑↱			↰↑	↱			
Traffic Volume (veh/h)	818	505	0	0	477	340	280	10	550	0	0	0
Future Volume (veh/h)	818	505	0	0	477	340	280	10	550	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	826	510	0	0	482	343	283	10	556			
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	1010	2168	0	0	522	370	486	17	447			
Arrive On Green	0.49	1.00	0.00	0.00	0.27	0.27	0.28	0.28	0.28			
Sat Flow, veh/h	3428	3618	0	0	2024	1369	1710	60	1572			
Grp Volume(v), veh/h	826	510	0	0	440	385	293	0	556			
Grp Sat Flow(s),veh/h/ln	1714	1763	0	0	1763	1538	1770	0	1572			
Q Serve(g_s), s	20.5	0.0	0.0	0.0	24.3	24.4	14.2	0.0	28.4			
Cycle Q Clear(g_c), s	20.5	0.0	0.0	0.0	24.3	24.4	14.2	0.0	28.4			
Prop In Lane	1.00		0.00	0.00		0.89	0.97		1.00			
Lane Grp Cap(c), veh/h	1010	2168	0	0	477	416	503	0	447			
V/C Ratio(X)	0.82	0.24	0.00	0.00	0.92	0.93	0.58	0.00	1.24			
Avail Cap(c_a), veh/h	1010	2168	0	0	494	431	503	0	447			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.61	0.61	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.1	0.0	0.0	0.0	35.5	35.5	30.7	0.0	35.8			
Incr Delay (d2), s/veh	3.4	0.2	0.0	0.0	25.8	29.0	1.2	0.0	127.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	0.0	13.5	12.2	6.1	0.0	37.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	0.2	0.0	0.0	61.2	64.5	31.9	0.0	163.7			
LnGrp LOS	C	A	A	A	E	E	C	A	F			
Approach Vol, veh/h		1336			825			849				
Approach Delay, s/veh		16.4			62.7			118.2				
Approach LOS		B			E			F				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	33.0	35.0	32.0
Change Period (Y+Rc), s	5.5	4.6	5.5	* 5
Max Green Setting (Gmax), s	61.5	28.4	29.3	* 28
Max Q Clear Time (g_c+I1), s	2.0	30.4	22.5	26.4
Green Ext Time (p_c), s	2.3	0.0	2.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	57.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1035	10	355	799	0	1237
Future Volume (veh/h)	1035	10	355	799	0	1237
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	0	1856
Adj Flow Rate, veh/h	1099	0	374	0	0	1302
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	0	3
Cap, veh/h	1221	556	1571		0	1571
Arrive On Green	0.35	0.00	0.45	0.00	0.00	0.45
Sat Flow, veh/h	3534	1610	3618	1572	0	3711
Grp Volume(v), veh/h	1099	0	374	0	0	1302
Grp Sat Flow(s),veh/h/ln	1767	1610	1763	1572	0	1763
Q Serve(g_s), s	20.1	0.0	4.5	0.0	0.0	22.1
Cycle Q Clear(g_c), s	20.1	0.0	4.5	0.0	0.0	22.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1221	556	1571		0	1571
V/C Ratio(X)	0.90	0.00	0.24		0.00	0.83
Avail Cap(c_a), veh/h	1273	580	1571		0	1571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	11.7	0.0	0.0	16.6
Incr Delay (d2), s/veh	8.9	0.0	0.4	0.0	0.0	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	1.7	0.0	0.0	8.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.0	0.0	12.0	0.0	0.0	21.7
LnGrp LOS	C	A	B		A	C
Approach Vol, veh/h	1099		374	A		1302
Approach Delay, s/veh	30.0		12.0			21.7
Approach LOS	C		B			C

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		35.8				35.8		32.2
Change Period (Y+Rc), s		5.5				* 5.5		8.7
Max Green Setting (Gmax), s		29.3				* 30		24.5
Max Q Clear Time (g_c+I1), s		6.5				24.1		22.1
Green Ext Time (p_c), s		3.3				4.6		1.4

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX Y

NEAR-TERM YEAR 2030 WITH ALTERNATIVE 2 (25%) FREEWAY ANALYSIS CALCULATION SHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6453	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1183
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6395	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1172
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.1
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7791	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1428
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.3
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sea World Dr to I-8	Unit	United States Customary

Geometric Data

Number of Lanes, ln	6	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.933
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9048	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1659
Total Trucks, %	3.40	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2160
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.9
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7459	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1651
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7917	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1753
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.5
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8411	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1862
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: I-8 to Old Town Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8484	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1878
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.2
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7170	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1587
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.5
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7640	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1692
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Old Town Ave to Washington St	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8160	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1807
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Old Town Ave to Washington Ave	Unit	United States Customary

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8150	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1804
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2133
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.9
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5510	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1525
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5880	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1627
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.73
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6270	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1735
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Washington St to Sassafras St		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6260	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1732
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2245
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.8
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5690	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1575
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6060	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1677
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.9
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6470	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1790
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Sassafras St to Pacific Hwy Viaduct		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6460	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1788
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.2
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7565	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1675
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.7
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8153	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1805
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.2
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8653	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1916
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.7
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Pacific Hwy Viaduct to Laurel St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8615	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1907
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2130
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.4
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7895	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1748
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.8
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8513	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1885
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2119
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9033	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2000
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.6
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Laurel St to Hawthorn St		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8995	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1991
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2296
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2112
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.3
Total Ramp Density Adjustment	8.8	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6615	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1831
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7133	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1974
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.0
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7573	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2096
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.8
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: Hawthorn St to 1st Ave		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7525	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2082
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2293
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2220
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.4
Total Ramp Density Adjustment	9.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	59.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8618	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1908
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9268	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2052
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9851	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2181
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.5
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 1st Ave to 6th Ave		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.1
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9806	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2171
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2286
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2213
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	43.2
Total Ramp Density Adjustment	9.9	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.6		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7891	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1747
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.79
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.1
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 NB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8494	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1881
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9029	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1999
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.7
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-5 SB: 6th Ave to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	60.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	8987	Heavy Vehicle Adjustment Factor (f_{HV})	0.961
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1990
Total Trucks, %	4.10	Capacity (c), pc/h/ln	2289
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2216
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.4
Total Ramp Density Adjustment	9.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	58.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3560	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	973
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.6
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2792	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	763
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	12.3
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4518	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1235
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.5
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: W. Mission Bay Dr/Midway Dr to I-5		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4344	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1188
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.7
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4063	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1110
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.0
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: I-5 to Morena Blvd	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5535	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1513
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2315
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2241
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	7.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.5		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5671	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2067
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.8
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: I-5 to Morena Blvd		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4388	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1599
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2322
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2248
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.0
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	62.2		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6183	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1352
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.1
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.920
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8435	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1844
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2126
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8661	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1894
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	45.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.6
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Morena Blvd to Hotel Circle/Taylor St		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.4
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.840
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6668	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1458
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2319
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1948
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.0
Total Ramp Density Adjustment	6.6	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.9		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6160	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1684
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.3
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8383	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2292
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8601	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1881
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.6
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Taylor St to Hotel Circle		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	2.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	62.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6652	Heavy Vehicle Adjustment Factor (f_{HV})	0.973
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1455
Total Trucks, %	2.80	Capacity (c), pc/h/ln	2311
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2237
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	7.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	61.1		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	6620	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1808
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.0
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 EB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9013	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2461
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.10
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	9251	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	2021
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

HCS7 Basic Freeway Report

Project Information

Analyst	LLG	Date	2/3/2020
Agency		Analysis Year	Alt 2 (25%)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak
Project Description	I-8 WB: Hotel Circle to SR-163		

Geometric Data

Number of Lanes (N), ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	3.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	61.9
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Volume (V), veh/h	7152	Heavy Vehicle Adjustment Factor (f_{HV})	0.974
Peak Hour Factor (PHF)	0.94	Flow Rate (v_p), pc/h/ln	1562
Total Trucks, %	2.70	Capacity (c), pc/h/ln	2303
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2229
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

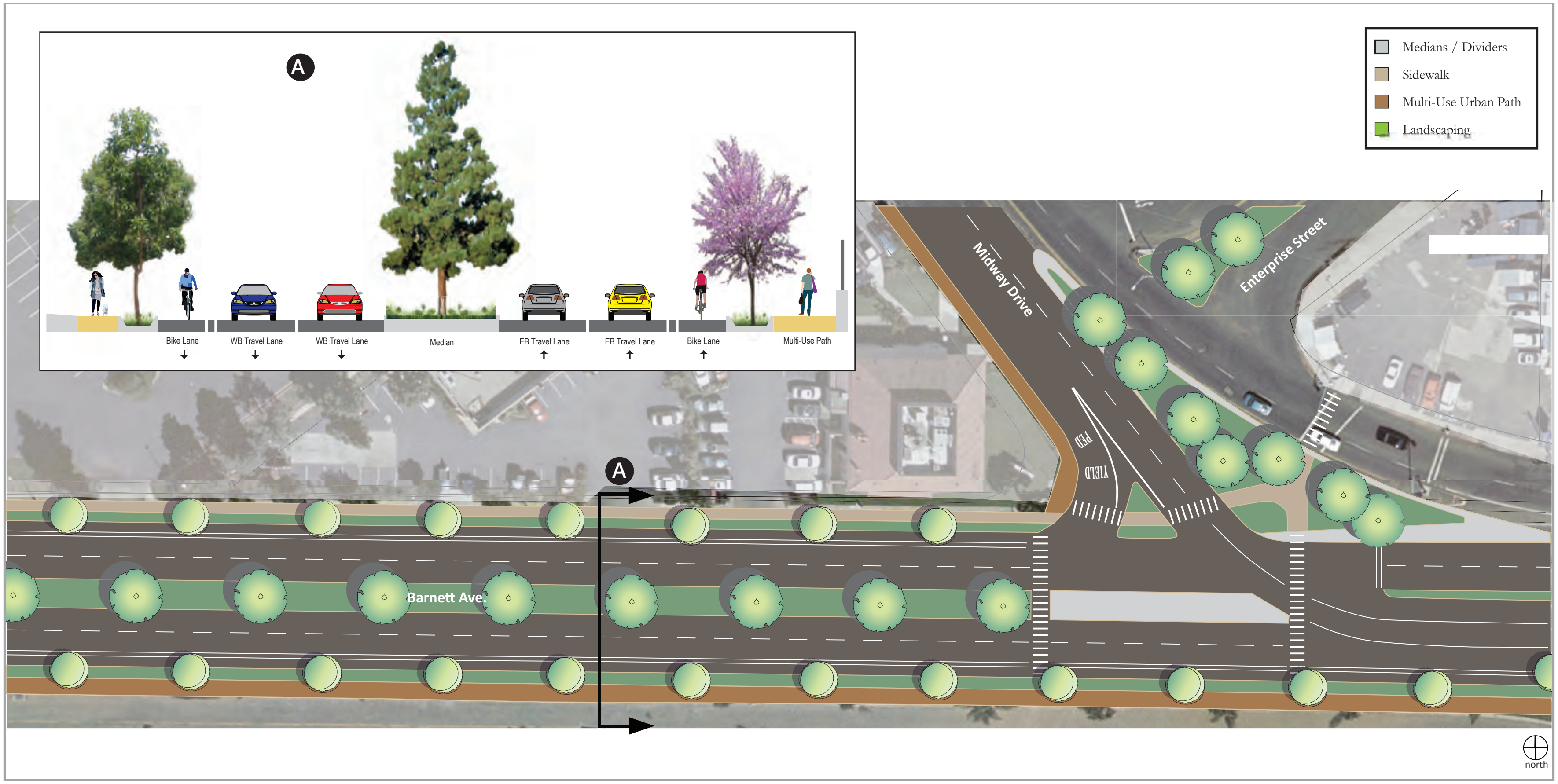
Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.9
Total Ramp Density Adjustment	8.1	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	60.3		

APPENDIX Z

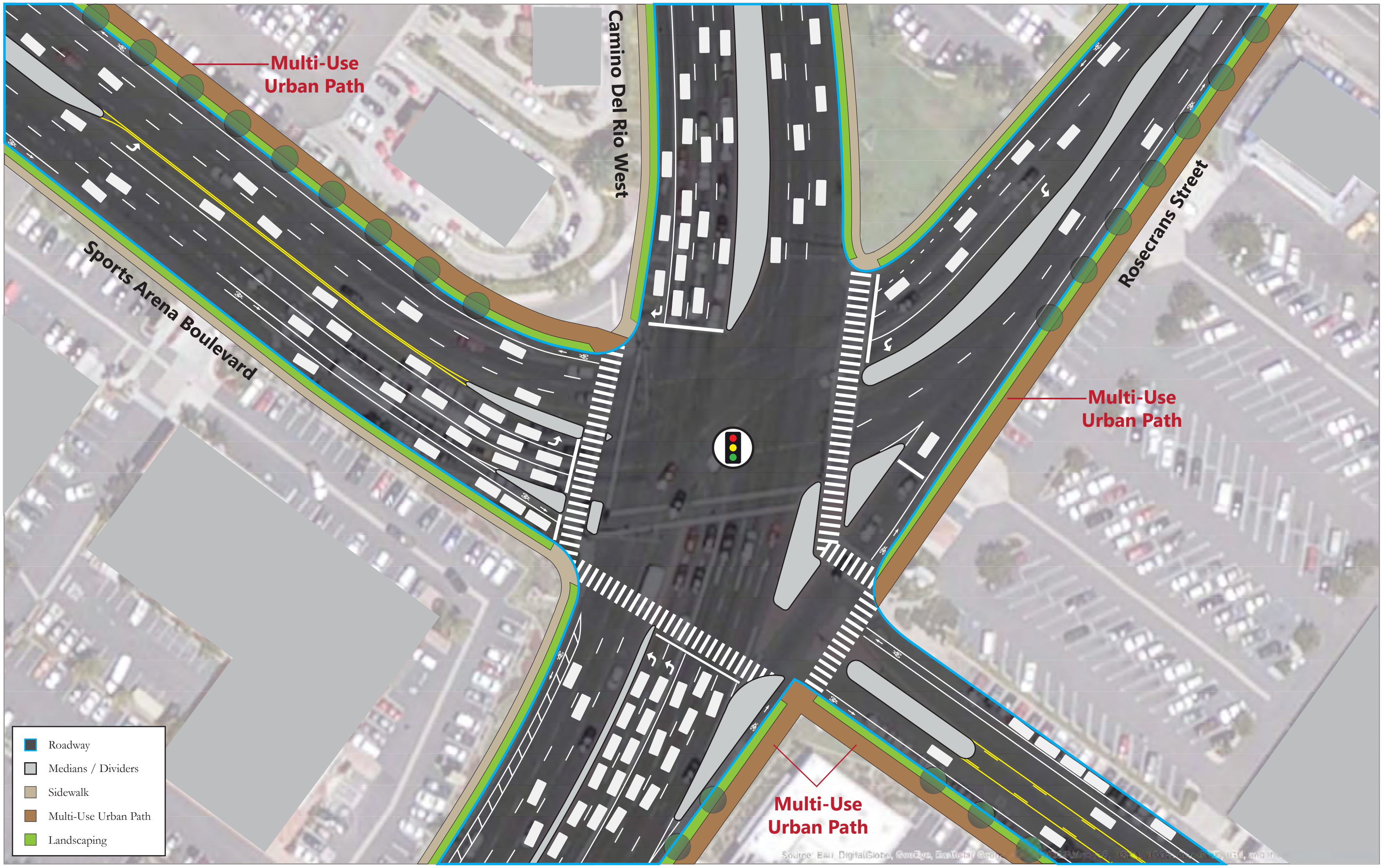
MIDWAY-PACIFIC COMMUNITY PLAN EXCERPTS

FIGURE 3-13: BARNETT AVENUE / LYTTON STREET IMPROVEMENTS



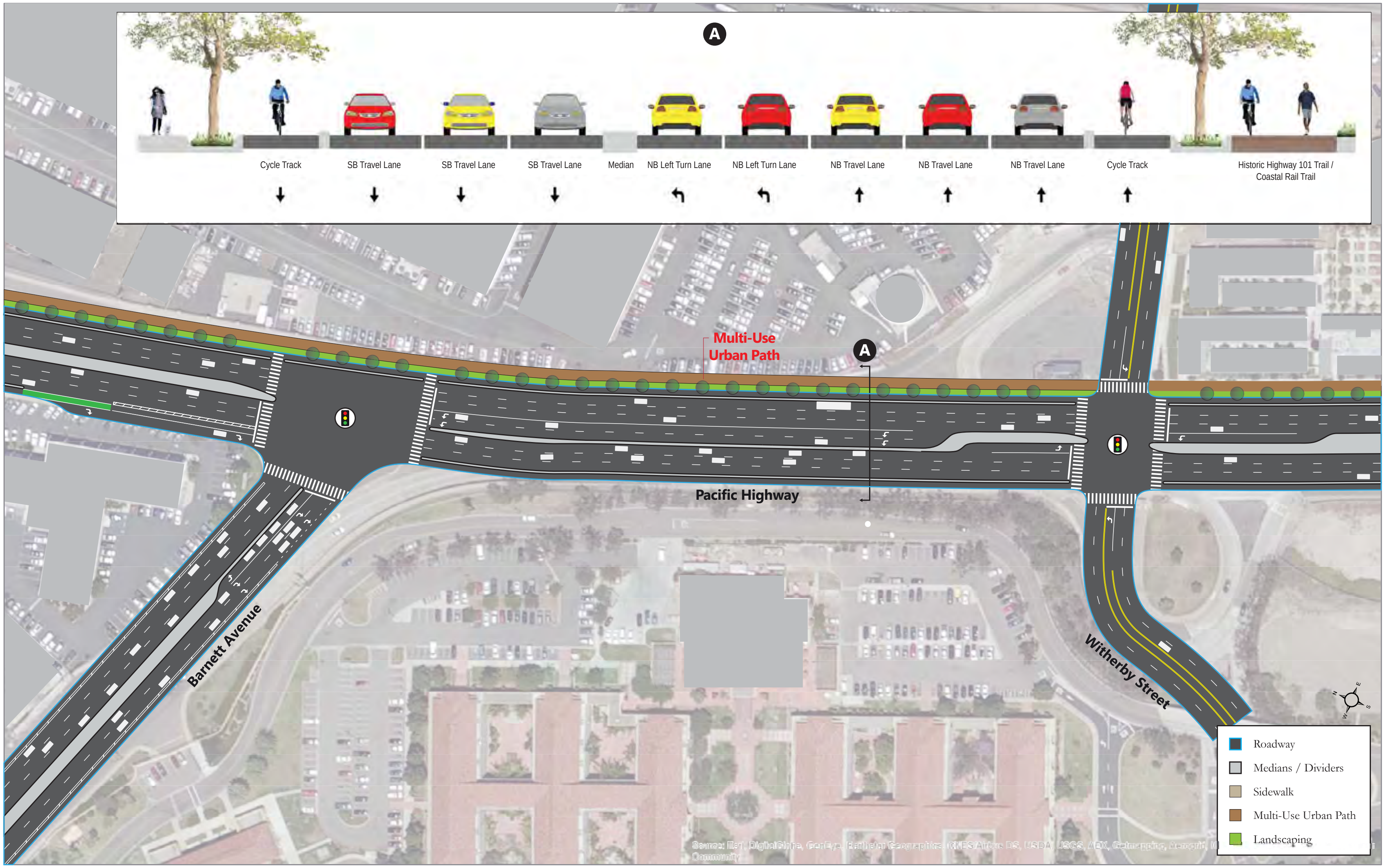
This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

FIGURE 3-15: SPORTS ARENA BOULEVARD / ROSECRANS STREET / CAMINO DEL RIO WEST INTERSECTION IMPROVEMENTS



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

FIGURE 3-16: PACIFIC HIGHWAY / BARNETT AVENUE / WITHERBY STREET INTERSECTION IMPROVEMENTS



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Project Location	Improvements
East side of Pacific Highway, between Taylor Street and Laurel Street	Implement green street elements/improvements that are aimed to improve active transportation facilities along the entire stretch of the segment. Active transportation improvements include: Install a 12 ft. wide multi-use urban path on the east side of the roadway that will replace the existing sidewalk. Install pedestrian scale lighting along the length of the path (Historic Highway 101). Storm water management improvements may include but not be limited to, street tree planting, both-side bioswales, and median landscaping (where feasible).
Hancock Street Extension	Extend Hancock Street between Midway Drive and Sports Arena Boulevard as a pedestrian and bicycle connection.
Midway Drive between Bogley Drive and Barnett Avenue	Install new sidewalks on the east side of the roadway.
Jessop Lane between Enterprise Street and Barnett Avenue	Install new sidewalks on both sides of the roadway.
St. Charles Street between Lytton Street and Cadiz Street	Install new sidewalks on both sides of the roadway.
Kemper Street between Kenyon Street to Midway Drive (South Side)	Install new sidewalks on the south side of the roadway.
Sports Arena Boulevard between Rosecrans Street and Pacific Highway	Install new sidewalks on the south side of the roadway.
Kurtz Street between Rosecrans Street and Pacific Highway	Install new sidewalks on both sides of the roadway.
Pacific Highway between Couts Street and Washington Street	Install new sidewalks on the southwest side of the roadway.
Witherby Street between Hancock Street and Pacific Highway	Install new sidewalks on both sides of the roadway.
Channel Way west of Hancock Street and east of Western Street	Install new sidewalks on north side of street adjacent to I-8 ROW.
Hancock Street between Channel Way and Hicock St.	Install new sidewalks on north side of street adjacent to I-8 ROW.
Intersection of Midway Drive and Enterprise Street	Install bulb-outs on the northeast leg of the intersection. Install a pedestrian refuge island on the northeast leg of the intersection.

APPENDIX AA

CITY OF SAN DIEGO DRAFT TRANSPORTATION STUDY MANUAL, APPENDIX B

Land Use Designations

Specific land use designations that fit within residential, commercial employment, industrial and agricultural employment, public facilities, and retail are provided in **Table Appendix B-1** below.

TABLE APPENDIX B-1

LAND USE DESIGNATIONS

LAND USE TYPE*
Residential
Congregate Care Facility
Estate Housing
Mobile Home
Multiple Dwelling Unit (all sizes)
Retirement/Senior Citizen Housing
Single Family Detached
Commercial Employment
Hospital: Convalescent/Nursing
Hospital: General
Industrial/Business Park
Small Industrial/Business Park
Large Industrial/Business Park
Scientific Research and Development
Hotel (w/convention facilities/restaurant)
Motel
Resort Hotel
Military Base
Commercial Office
Corporate Headquarters/Single Tenant Office
Medical Office
Government Offices (Use is Primarily Office with Employees; not Providing In-Person Customer Service)
Industrial/Agricultural Employment
Industrial: Manufacturing/Assembly
Industrial: Rental Storage
Industrial: Truck Terminal

LAND USE TYPE*
Industrial: Warehousing
Agriculture
Regional Public Facilities/Services: Not Locally Serving
Airport
Cemetery
University
Community College
High School: Private
Junior High/Middle School: Private
Elementary School: Private
House of Worship: General
House of Worship: Without School or Day Care
Bus Depot
Regional Park or Beach, Ocean or Bay Park
Public Facilities/Services: Locally Serving
High School: Public
Junior High/Middle School: Public
Elementary School: Public
Day Care Center/Child Care Center
Library
Department of Motor Vehicles
Government Offices (Providing Primarily In-Person Customer Service)
Post Office
Park & Ride Lot
Transit Station
Neighborhood Park (developed or undeveloped)
Regional Retail (includes Recreational Uses): Not Locally Serving
Shopping Center: Community (100,000 sq. ft. or more GLA on 10 or more acres)
Shopping Center: Regional (300,000 sq. ft. or more GLA)
Marina
San Diego Zoo
Sea World
Golf Course

LAND USE TYPE*
Retail (includes Recreational Uses): May Qualify for Screening Based on Size (of less than 100,000 square feet)/Market Study. If multiple retail land uses are provided as one development, the sizes for all retail uses must be summed and considered together as a shopping center to determine whether the project qualifies for screening.
Automobile Services
Convenience Market Chain
Discount Store/Discount Club
Drugstore
Furniture Store
Lumber/Home Improvement Store
Nursery
Restaurant
Shopping Center: Neighborhood (30,000 sq. ft. or more GLA on 10 or fewer acres)
Specialty Retail Center/Strip Commercial
Supermarket
Financial Institution (Bank or Credit Union)
Bowling Center
Movie Theater
Racquetball/Tennis/Health Club
Sport Facility (Indoor or Outdoor)

*The above land use designations are sourced from the *San Diego Municipal Code, Land Development Code: Trip Generation Manual*.

APPENDIX BB

CONSTRUCTION ASSESSMENT INFORMATION

Alternative 1: Navy Recapitalization at OTC - Construction

Phase #	Phase Name	Start Date	End Date	Num Days Week	Num Days	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Daily Worker Trips	Daily Vendor Trips	Daily Hauling Trips
1	Demolition	1/1/2021	3/11/2021	5	50	6	15	0	2,422.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	97
2	Site Preparation	3/12/2021	4/8/2021	5	20	7	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	36	0	0
3	Grading	4/9/2021	6/10/2021	5	45	8	20	0	14,125.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	0	628
4	Building Construction	6/11/2021	7/30/2025	5	1079	18	662	338	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,324	676	0
5	Paving	7/31/2025	10/15/2025	5	55	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
6	Architectural Coating	10/16/2025	12/31/2025	5	55	4	132	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	264	0	0

Alternative 2: Higher-density Mixed-use Revitalization - Construction and 2050 Operation

Phase #	Phase Name	Start Date	End Date	Num Days Week	Num Days	Phase Description	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Daily Worker Trips	Daily Vendor Trips	Daily Hauling Trips
1	Demolition 1	1/1/2026	4/8/2026	5	70	2026-2029	6	15	0	15,084.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	431
2	Site Preparation 1	4/9/2026	6/3/2026	5	40	2026-2029	7	18	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	36	0	0
3	Grading and Utilities 1	6/4/2026	7/13/2026	5	28	2026-2029	14	35	0	15,313.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,094
4	Foundation Drilling 1	6/4/2026	12/21/2026	5	143	2026-2029	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
5	Building Construction 1	7/14/2026	11/7/2029	5	867	2026-2029	54	946	335	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,892	670	0
6	Paving 1	11/8/2029	12/4/2029	5	19	2026-2029	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
7	Architectural Coating 1	12/5/2029	12/31/2029	5	19	2026-2029	6	189	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	378	0	0
8	Grading and Utilities 2	1/1/2030	1/30/2030	5	22	2030-2034	14	35	0	12,250.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,114
9	Foundation Drilling 2	1/1/2030	6/7/2030	5	114	2030-2034	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
10	Building Construction 2	1/31/2030	11/17/2034	5	1,252	2030-2034	54	946	335	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,892	670	0
11	Paving 2	11/18/2034	12/8/2034	5	15	2030-2034	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
12	Architectural Coating 2	12/9/2034	12/31/2034	5	15	2030-2034	6	189	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	378	0	0
13	Grading and Utilities 3	1/1/2035	3/26/2035	5	61	2035-2049	14	35	0	33,688.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,105
14	Foundation Drilling 3	1/1/2035	3/13/2036	5	314	2035-2049	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
15	Building Construction 3	3/27/2035	9/8/2049	5	3,772	2035-2049	54	946	335	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,892	670	0
16	Paving 3	9/9/2049	11/4/2049	5	41	2035-2049	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
17	Architectural Coating 3	11/5/2049	12/31/2049	5	41	2035-2049	6	189	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	378	0	0

Alternative 3: Lower-density Mixed-use Revitalization - Construction and 2050 Operation

Phase #	Phase Name	Start Date	End Date	Num Days Week	Num Days	Phase Description	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Daily Worker Trips	Daily Vendor Trips	Daily Hauling Trips
1	Demolition 1	1/1/2026	4/8/2026	5	70	2026-2029	6	15	0	15,084.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	431
2	Site Preparation 1	4/9/2026	6/3/2026	5	40	2026-2029	7	18	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	36	0	0
3	Grading and Utilities 1	6/4/2026	7/13/2026	5	28	2026-2029	14	35	0	15,313.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,094
4	Foundation Drilling 1	6/4/2026	11/18/2026	5	120	2026-2029	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
5	Building Construction 1	7/14/2026	11/7/2029	5	867	2026-2029	36	628	241	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,256	482	0
6	Paving 1	11/8/2029	12/4/2029	5	19	2026-2029	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
7	Architectural Coating 1	12/5/2029	12/31/2029	5	19	2026-2029	4	126	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	252	0	0
8	Grading and Utilities 2	1/1/2030	1/30/2030	5	22	2030-2034	14	35	0	12,250.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,114
9	Foundation Drilling 2	1/1/2030	5/14/2030	5	96	2030-2034	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
10	Building Construction 2	1/31/2030	11/17/2034	5	1,252	2030-2034	36	628	241	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,256	482	0
11	Paving 2	11/18/2034	12/8/2034	5	15	2030-2034	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
12	Architectural Coating 2	12/9/2034	12/31/2034	5	15	2030-2034	4	126	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	252	0	0
13	Grading and Utilities 3	1/1/2035	3/26/2035	5	61	2035-2049	14	35	0	33,688.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,105
14	Foundation Drilling 3	1/1/2035	1/3/2036	5	264	2035-2049	3	20	16	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
15	Building Construction 3	3/27/2035	9/8/2049	5	3,772	2035-2049	36	628	241	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,256	482	0
16	Paving 3	9/9/2049	11/4/2049	5	41	2035-2049	6	15	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
17	Architectural Coating 3	11/5/2049	12/31/2049	5	41	2035-2049	4	126	0	0.00	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	252	0	0

Alternative 4: Higher-density Mixed-use Revitalization including a Transit Center - Construction and 2050 Operation

Phase #	Phase Name	Start Date	End Date	Num Days Week	Num Days	Phase Description	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Daily Worker Trips	Daily Vendor Trips	Daily Hauling Trips
1	Demolition 1	1/1/2026	4/8/2026	5	70	2026-2029	6	15	0	15,084	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	431
2	Site Preparation 1	4/9/2026	6/3/2026	5	40	2026-2029	7	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	36	0	0
3	Grading and Utilities 1	6/4/2026	7/13/2026	5	28	2026-2029	14	35	0	14,375	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,027
4	Foundation Drilling 1	6/4/2026	3/24/2027	5	210	2026-2029	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
5	Building Construction 1	7/14/2026	11/7/2029	5	867	2026-2029	81	3,326	482	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6,652	964	0
6	Paving 1	11/8/2029	12/4/2029	5	19	2026-2029	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
7	Architectural Coating 1	12/5/2029	12/31/2029	5	19	2026-2029	9	665	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,330	0	0
8	Grading and Utilities 2	1/1/2030	1/30/2030	5	22	2030-2034	14	35	0	11,500	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,045
9	Foundation Drilling 2	1/1/2030	8/22/2030	5	168	2030-2034	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
10	Building Construction 2	1/31/2030	11/17/2034	5	1,252	2030-2034	81	3,326	482	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6,652	964	0
11	Paving 2	11/18/2034	12/8/2034	5	15	2030-2034	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
12	Architectural Coating 2	12/9/2034	12/31/2034	5	15	2030-2034	9	665	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,330	0	0
13	Grading and Utilities 3	1/1/2035	3/26/2035	5	61	2035-2049	14	35	0	31,625	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	1,037
14	Foundation Drilling 3	1/1/2035	10/7/2036	5	462	2035-2049	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
15	Building Construction 3	3/27/2035	9/8/2049	5	3,772	2035-2049	81	1,392	482	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2,784	964	0
16	Paving 3	9/9/2049	11/4/2049	5	41	2035-2049	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
17	Architectural Coating 3	11/5/2049	12/31/2049	5	41	2035-2049	9	278	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	556	0	0

Alternative 5: Lower-density Mixed-use Revitalization including a Transit Center - Construction and 2050 Operation

Phase #	Phase Name	Start Date	End Date	Num Days Week	Num Days	Phase Description	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	Daily Worker Trips	Daily Vendor Trips	Daily Hauling Trips
1	Demolition 1	1/1/2026	4/8/2026	5	70	2026-2029	6	15	0	15,084	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	431
2	Site Preparation 1	4/9/2026	6/3/2026	5	40	2026-2029	7	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	36	0	0
3	Grading and Utilities 1	6/4/2026	7/13/2026	5	28	2026-2029	14	35	0	12,500	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	893
4	Foundation Drilling 1	6/4/2026	4/7/2027	5	220	2026-2029	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
5	Building Construction 1	7/14/2026	11/7/2029	5	867	2026-2029	63	3,026	389	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6,052	778	0
6	Paving 1	11/8/2029	12/4/2029	5	19	2026-2029	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
7	Architectural Coating 1	12/5/2029	12/31/2029	5	19	2026-2029	7	605	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,210	0	0
8	Grading and Utilities 2	1/1/2030	1/30/2030	5	22	2030-2034	14	35	0	10,000	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	909
9	Foundation Drilling 2	1/1/2030	9/3/2030	5	176	2030-2034	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
10	Building Construction 2	1/31/2030	11/17/2034	5	1,252	2030-2034	63	3,026	389	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6,052	778	0
11	Paving 2	11/18/2034	12/8/2034	5	15	2030-2034	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
12	Architectural Coating 2	12/9/2034	12/31/2034	5	15	2030-2034	7	605	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1,210	0	0
13	Grading and Utilities 3	1/1/2035	3/26/2035	5	61	2035-2049	14	35	0	27,500	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	70	0	902
14	Foundation Drilling 3	1/1/2035	11/6/2036	5	484	2035-2049	3	20	16	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	40	32	0
15	Building Construction 3	3/27/2035	9/8/2049	5	3,772	2035-2049	63	1,090	389	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2,180	778	0
16	Paving 3	9/9/2049	11/4/2049	5	41	2035-2049	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	30	0	0
17	Architectural Coating 3	11/5/2049	12/31/2049	5	41	2035-2049	7	218	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	436	0	0

APPENDIX CC

SANDAG REGIONAL TRAVEL MODEL VMT REPORTS

Vehicle Miles of Travel Report

Scenario ID **1196** **NAVWAR Redevelopment - No Build - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,584,272
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	100,226
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1196	4,243,618	15,165,142	88,714,557	61,009,305	14.4
Jurisdiction	SAN DIEGO	1196	1,917,354	6,877,379	35,561,408	23,560,182	12.3
CPA	Midway-Pacific Highway	1196	35,603	131,986	494,614	309,880	8.7
Site	NAVWAR Project Site	1196	~~7~~	~~28~~	~~40~~	~~33~~	**~~4.7~~**

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1196	1,797,656	5,773,715	44,519,800	38,065,063	21.2
Jurisdiction	SAN DIEGO	1196	952,305	2,901,137	21,619,948	18,664,241	19.6
CPA	Midway-Pacific Highway	1196	38,787	108,293	725,850	633,821	16.3
Site	NAVWAR Project Site	1196	4,068	11,367	62,729	55,422	**13.6**

Report Generated: 04/02/20

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Vehicle Miles of Travel Report

Scenario ID **1197** **NAVWAR Redevelopment - Navy Recapitalization - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,600,496
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	101,667
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1197	4,243,618	15,167,113	88,729,926	61,008,854	14.4
Jurisdiction	SAN DIEGO	1197	1,917,354	6,879,570	35,581,933	23,572,987	12.3
CPA	Midway-Pacific Highway	1197	35,603	131,978	494,246	308,819	8.7
Site	NAVWAR Project Site	1197	~~7~~	~~28~~	~~38~~	~~31~~	~~4.4~~

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1197	1,797,656	5,773,426	44,517,352	38,063,131	21.2
Jurisdiction	SAN DIEGO	1197	949,514	2,891,700	21,534,647	18,590,076	19.6
CPA	Midway-Pacific Highway	1197	39,390	109,824	732,923	640,400	16.3
Site	NAVWAR Project Site	1197	4,065	11,281	62,146	55,378	13.6

Report Generated: 04/02/20

SANDAG

Vehicle Miles of Travel Report

Scenario ID **1195** **NAVWAR Redevelopment - High Density, No Transit Center - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,604,131
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	-
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1195	4,257,316	15,211,469	88,838,943	60,988,032	14.3
Jurisdiction	SAN DIEGO	1195	1,931,052	6,925,303	35,721,089	23,612,836	12.2
CPA	Midway-Pacific Highway	1195	49,298	179,201	639,907	380,278	7.7
Site	NAVWAR Project Site	1195	13,688	48,817	165,081	89,657	**6.6**

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1195	1,804,336	5,779,956	44,496,628	38,033,493	21.1
Jurisdiction	SAN DIEGO	1195	957,537	2,905,275	21,606,817	18,648,968	19.5
CPA	Midway-Pacific Highway	1195	42,885	113,973	753,985	656,282	15.3
Site	NAVWAR Project Site	1195	8,000	19,953	117,546	102,413	**12.8**

Report Generated: 04/02/20

SANDAG

Vehicle Miles of Travel Report

Scenario ID **1200** **NAVWAR Redevelopment - Low Density, No Transit Center - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,632,844
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	391,806
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1200	4,253,663	15,201,384	88,820,920	61,032,534	14.3
Jurisdiction	SAN DIEGO	1200	1,927,399	6,912,526	35,677,201	23,625,062	12.3
CPA	Midway-Pacific Highway	1200	45,644	166,417	608,023	368,172	8.1
Site	NAVWAR Project Site	1200	10,047	36,492	134,376	80,051	**8.0**

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1200	1,802,561	5,782,513	44,532,815	38,072,560	21.1
Jurisdiction	SAN DIEGO	1200	956,376	2,907,858	21,631,387	18,670,073	19.5
CPA	Midway-Pacific Highway	1200	41,322	112,587	746,411	649,639	15.7
Site	NAVWAR Project Site	1200	7,095	18,381	109,602	95,537	**13.5**

Report Generated: 04/07/20

SANDAG

Vehicle Miles of Travel Report

Scenario ID **1198** **NAVWAR Redevelopment - High Density, With Transit Center - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,659,626
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	752,769
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1198	4,266,447	15,246,678	89,040,803	61,062,580	14.3
Jurisdiction	SAN DIEGO	1198	1,940,183	6,958,297	35,868,641	23,654,815	12.2
CPA	Midway-Pacific Highway	1198	58,431	207,622	711,184	386,785	6.6
Site	NAVWAR Project Site	1198	22,839	77,927	237,234	102,514	**4.5**

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1198	1,808,766	5,782,979	44,581,248	38,117,231	21.1
Jurisdiction	SAN DIEGO	1198	959,579	2,901,668	21,594,431	18,642,688	19.4
CPA	Midway-Pacific Highway	1198	43,089	109,552	721,825	627,106	14.6
Site	NAVWAR Project Site	1198	9,867	20,695	126,518	109,312	**11.1**

Report Generated: 04/02/20

SANDAG

Vehicle Miles of Travel Report

Scenario ID **1199** **NAVWAR Redevelopment - Low Density, With Transit Center - Project Site**

Aggregate VMT

Gross VMT

Geography	VMT
Regionwide	98,636,509
Clip 1	
Clip 2	

Distribution VMT

Query	Type	Description	VMT
1	Zone	NAVWAR Project Sit	585,564
2	0	0	-
3	0	0	-
4	0	0	-

SB-743 VMT

VMT per Resident

Geography		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide		1199	4,261,882	15,226,837	88,997,151	61,034,117	14.3
Jurisdiction	SAN DIEGO	1199	1,935,618	6,937,731	35,764,051	23,587,790	12.2
CPA	Midway-Pacific Highway	1199	53,867	193,861	678,577	380,211	7.1
Site	NAVWAR Project Site	1199	18,273	63,587	206,591	96,274	**5.3**

VMT per Employee

Geography		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide		1199	1,806,554	5,782,365	44,569,773	38,084,110	21.1
Jurisdiction	SAN DIEGO	1199	960,386	2,908,551	21,655,843	18,685,800	19.5
CPA	Midway-Pacific Highway	1199	41,745	108,701	714,034	619,376	14.8
Site	NAVWAR Project Site	1199	8,068	17,937	106,738	92,452	**11.5**

Report Generated: 04/06/20

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